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DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list :—

1927
Aug. 10-12 Navy v. R.A.F. Cricket Match.
Aug. 12-21 International Meeting, Zurich
Aug. 20–Sept. 2 .... International Aero Exhibition, Copenhagen.
Sept. 5 .... Gordon-Bennett Balloon Race. Detroit, U.S.A.
Sept. 25 .... Schneider Trophy Race at Venice.
Oct. 20 .... Aero Golfing Soc. (Cellon Cup), Walton Heath.
Oct. 31 .... Guggenheim Safe-Aircraft Competition Closes

EDITORIAL COMMENT.

BY no stretch of the imagination could one call the race for the King's Cup a success. Out of the 26 entries but 16 started, and only 6 finished the race. The reduction in the number of starters was due, in seven out of the ten, to dissatisfaction with the handicap formula. The other three were willing to start, but were prevented from doing so ; one by an oil leak, one by insufficient tank capacity, and one by a cracked carburettor casting. That left 16 starters, and that this figure should have dwindled to 6 at the finish may appear a somewhat regrettable commentary on modern aircraft and aero engines. It should be remembered, however, that the race was run over a total distance of more than 540 miles, all of which had to be flown at full throttle, or at least very nearly so. Furthermore, the weather was most unfavourable, with low clouds, heavy rain showers and a strong wind. The effect of the latter would actually be equivalent to increasing the distance flown to probably at least 600 miles. It is not, therefore, to be wondered at that there were "casualties." One redeeming feature is that out of all the ten competitors who retired for any reason whatever during the race no one sustained the slightest personal injury, nor so far as we were able to ascertain, did any of the machines involved suffer any damage. This was, no doubt, due to the care with which the course had been chosen, and if this was such that but few people along the route had an opportunity of seeing the machines, it did at any rate have the advantage of being safe. Having said that, however, one has said all that is in favour of this year's King's Cup Race. In the future it should be run on totally different lines, and it is, as we have repeatedly pointed out, essential that it should be a "Round Britain" affair, preferably in the nature of a reliability trial rather than a speed race, since such a course would be entirely unsuitable for fast racing machines. Let us have a speed race by all means, but do not let us call it the King's Cup Race. The Aerial Derby was instituted to be a speed race, and should be revived as such.

The King's Cup Race

Lest anyone should, from the number of " retirements " in the King's Cup Race, form an erroneous impression of the reliability of British machines and engines, it may be as well to summarise the reasons which put the various competitors out of the running. The first " casualty " was of a somewhat unusual character. From blood on the machine it is assumed that the propeller hit a bird, and the result was engine vibration which caused the pilot, not knowing what had happened, to land at the first opportunity. Thus, this particular falling out certainly cannot be blamed on either machine or engine. One competitor retired as it was obvious that his handicap was hopeless. One ran out of petrol, and one lost his way, while one got buffeted about so badly by the bumps that he had to give up. Of the remaining competitors one had his petrol tank burst while on the ground, two had valve trouble, and one lost his oil pressure. Truly, not a very terrifying list of causes for breakdowns.

As a race the affair was uninteresting, because after Mr. Butler fell out it was obvious that, barring accidents, Mr. Hope was a certain winner. We heard the view expressed that for the King's Cup to be won at a speed of 92·8 m.p.h. was a retrograde step. With this we do not agree. The race for the King's Cup is not, and should not be, a pure speed race, and so long as it is a handicap race, with low-powered slow machines eligible, there is always a chance for a slow machine to win ; nor is this, we think, any cause for regret. Mr. Hope had worked like a slave on his machine and engine ; he had no wealthy firm behind him to assist, and, in fact, did most of the work himself. It was a thoroughly sporting effort, and he well deserved his win.

The organisation of the King's Cup Race was good, and there is only one fault we have to find with the Royal Aero Club's side of it. (It should be clearly understood that the Royal Aero Club is not to blame for the handicap formula. The Royal Aero Club is a sporting institution and *not* a scientific one, and its job is to organise the race, not to produce technical formulæ). The allocation of racing numbers was frankly confusing. What had, apparently, happened was that as soon as a machine was entered it was allotted a racing number, so that the numbers merely showed in what sequence the machines had been entered, a subject of no particular interest to anyone, and, of course, of no significance whatever in the race. The result was, however, that the programme became very bewildering, the first machine (limit man) being No. 6, the next No. 4, the next 27, and so on. In future it would be very much better if the allocation of racing numbers were deferred until the handicap allowances were known, the limit man then being given No. 1, and so on. Then, at the finish, if No. 5 came in first, one would know that he had passed four machines. As it was, even those directly interested had difficulty in following what was happening, and the general public must have been hopelessly at sea.

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That Formula

The joke (or the tragedy, according to how one looks at it) of the meeting was, of course, the handicap formula. Actually the thing was something of both, the tragedy being that the effect of the formula was to keep from starting a large number of the machines that had been entered, the joke that nobody discovered the actual working of the formula until it was too late to make any change. There seems to be little doubt that what happened was that each firm examined the effect of the formula on its own machines and, in most cases finding that the formula under-estimated the speed, were content with that and did not trouble to find out how other people's machines fared under the formula. As the formula and curve for determining the constant K were published in FLIGHT as long ago as June 2, there is not the excuse of lack of time. Lest it should be thought that we blame the firms alone for this, we hasten to admit that we ourselves, the technical press, failed to discover the snag. In our own particular case this was mainly due to lack of information concerning the wing spans of some of the fast machines. This, in turn, was due to the Air Ministry's " hush-hush " methods of dealing with the aviation press. (Wonderful how, with a little goodwill, almost anything can be worked around to a complaint against the Air Ministry !) The airworthiness department must have all the necessary particulars concerning all the competing machines, and one might have thought that some of the " best brains of the country " would have spotted the snag. If they did, they kept quiet about it.

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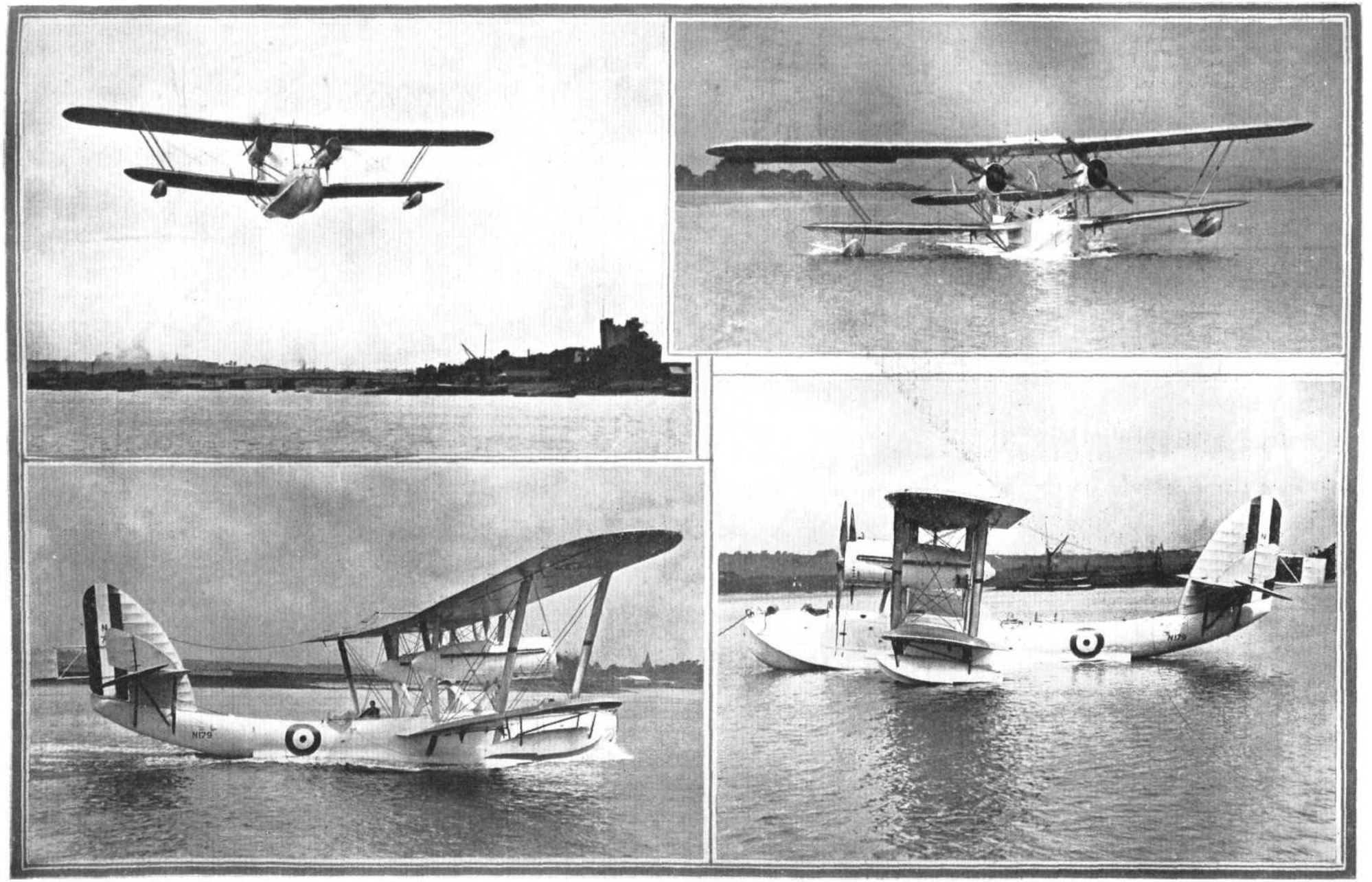
And the Next One

Whether we are to go back to individual handicapping on form, or whether we are to continue our efforts to evolve a practical formula are questions that must be considered at once, since firms intending to build machines specially for racing will need to know the basis as soon as possible. Capt. Goodman Crouch and Capt. Dancy have reduced handicapping to a fine art, and in nearly all cases can be relied upon to produce close finishes, if that is what is wanted. On the other hand, some really useful formula, which will offer an inducement to greater efficiency, is probably to be preferred, and the question then arises whether this year's formula provides a workable basis upon which to start, or whether we shall have to get right away from it and start entirely afresh. There are, we know, those who believe that all that is required is to raise the value of the constant K from 12 to some higher figure such as 19 or 22. That would have the effect of bringing the fast machines more into line, but might do so by penalising those at the other end of the scale, thus merely transferring the unfairness from one type of machine to the other, which would be an unwise thing to do, the more so as relatively low-powered aeroplanes form a much larger percentage of those available, or likely to become available, for racing purposes.

As the subject is one of very considerable importance, we shall be glad to publish the views of readers and shall be willing to devote, during the next few weeks, any reasonable amount of space to a ventilation of the subject. Sqdn.-Ldr. Jones has made the ingenious suggestion that each firm should be allowed to handicap all the other firms' machines, but not its own. Thus, if ten firms were involved, each machine would be handicapped by nine other firms, and the average figure would probably be a fairly useful one, although all would be likely to be on the high side. At any rate, such a procedure would be amusing, if nothing else.



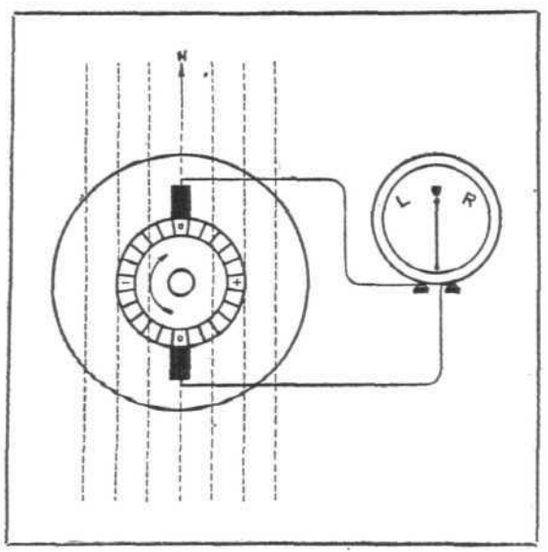
THE SHORT "SINGAPORE": An all-metal flying boat fitted with two Rolls-Royce "Condor" engines. The machine has many interesting features, apart from its Duralumin construction, but as a service type it may not be described.

THE PIONEER EARTH INDICATOR COMPASS

WHEN describing Col. Lindbergh's successful flight from New York to Paris we mentioned the fact that he employed a Pioneer Earth Indicator Compass, to which Col. Lindbergh attributed the successful navigation of the "Spirit of St. Louis" across the Atlantic.

We have already briefly outlined the principles underlying this instrument, but we feel certain that further particulars of its characteristics, construction and operation will be of interest to our readers. Mr. Maurice M. Titterington, Chief Engineer of the Pioneer Instrument Co., of Brooklyn, N.Y., gives a detailed description of this instrument in our American contemporary *Aviation*, from which article we are indebted for the following notes :—

In order to appreciate the advantages of the Power Earth Indicator Compass, it is first necessary briefly to refer to certain characteristics of the ordinary magnetic compass—with which, no doubt, most of our readers are already familiar. The force which causes the magnetic compass to point out directions is the reaction between the compass magnets and the earth's magnetic field. As long as the compass card,



The Pioneer Earth Indicator Compass : Diagram showing the generator-armature rotating in the earth's magnetic field.

with its magnets and pivot, is constrained to rotate in a horizontal plane the magnets tend to line up with the horizontal force of the earth's magnetism, thus indicating directions in relation to magnetic north.

Unfortunately, the direction of the earth's magnetism is horizontal in only a few places ; in New York, for instance, it is inclined downward at an angle of about 70° to the horizontal. When the compass is mounted on a fixed support where the magnetic element is held horizontal by the force of gravity, its magnets react with the horizontal component of the earth's magnetism.

Under these conditions the compass is very accurate, but on aircraft conditions are different and the well-known errors and troubles arise. For example, the fore and aft acceleration forces act on the pendulous magnetic element to tilt it out of the horizontal and cause it to act as if constrained to rotate about some axis inclined to the vertical. When so inclined the component of the earth's magnetism acts on the compass so as to cause the compass element to rotate—resulting in errors of as much as 180°.

A second source of error arises from the angular movement of the aircraft in yawing, rolling, and pitching, which movements are transmitted to the magnetic element through the liquid. Vibrations of the aircraft, which usually have rotary components in the plane of the magnetic element, also cause erratic readings, while another source of trouble is caused by magnetic materials in the vicinity of the compass.

In the Pioneer Earth Indicator Compass these defects are obviated or greatly reduced. Its outstanding feature lies in the separation of the magnetic element from the direction-indicating element. Briefly, it consists of three principal units : a generator, a controller and an indicator. The generator is the direction-determining element of the compass, and corresponds to the magnetic needles of the ordinary compass. It is similar to any direct-current electric dynamo having an armature with commutator and collector brushes but with no artificial field—the earth serving as field.

The armature, which is suspended in gimbal rings, is driven by an anemometer or windmill, while the generator brushes are mounted so that they may be rotated around the commutator. The stability of the armature is maintained by the action of its own gyroscopic force and the use of a suitable damping device.

The indicator is a sensitive zero centre galvanometer, electrically connected to the brushes of the generator. The controller is a purely mechanical device for setting the angle of the generator brushes—as will be explained later—and is connected to the generator by a flexible shaft and casing. The generator is usually mounted in the rear of the fuselage with the windmill projecting above the fuselage into the slipstream. This position is usually good as regards magnetic conditions, but it may be mounted on almost any part of the aircraft. The indicator and controller are usually mounted on the instrument board in front of the pilot.

Now, to explain the operation of this instrument. The accompanying diagram shows a plan view of an armature rotating on a vertical axis in the earth's magnetic field—the latter being shown by dotted lines. A pair of brushes are connected to an electric galvanometer of the zero centre type and bear on diametrically opposite sides of the commutator. Such an armature rotating in a magnetic field produces electrical potential at the commutator. If the brushes are rotated around the commutator, it will be found that the indication of the meter will vary from zero to maximum in one direction, back to zero, then to maximum in the other direction, and to zero again when the brushes are returned to the first position.

There are thus two diametrically opposite points on the commutator when the meter shows zero potential and two similar points 90° around from zero when the meter shows maximum potential. The angular relation between a line drawn between the points of zero potential on the commutator and the direction of the earth's magnetism is always the same.

If the armature is wound and connected to the commutator so that the points of zero potential are in line with the magnetism of the earth, the galvanometer will show zero only when the brushes are in line with the direction of the earth's magnetism. Therefore, when the galvanometer shows no indication, we know that the brushes are in a line with magnetic north-south.

Let us follow its operation when fitted on an aeroplane. First assume that the machine is swung round, on the ground, until it points in some known direction, say north. Then, with the armature running, the brushes are rotated until the galvanometer shows that no current is flowing, *i.e.*, the brushes in line with earth's field, and pointers on both indicator and controller pointing to zero. If the aeroplane is now flown directly north, the indicator will continue to show zero—the brushes being in contact with the points of zero potential on the commutator.

If, however, the machine be turned slightly, say, towards the east, then the brushes will move with the aeroplane relatively to the earth's field, or, in effect, around the commutator towards the points of maximum potential, and electric current will flow from the armature to the meter causing the latter's pointer to move to one side of zero.

Now, the brushes are connected to the meter, so that its pointer will move in the direction in which the aeroplane turns, and by steering so as to keep the pointer at zero, the north course will be followed. Should it be desired to follow another course, the angle of the brushes in relation to the aeroplane is changed by the angle and the desired heading differs from the zero or north heading.

For example, if it is desired to fly east, or 90° from north, the brushes would be rotated by hand through an angle of 90°, so that the brush that was on the north side of the commutator is now on the west side, and the brush that was on the south side is now on the east side.

Current will now flow through the meter in such a direction that the pointer would show "left," *i.e.*, that the areoplane was to the left of the desired heading. The pilot would, therefore, turn towards the right, and when he had turned 90° the brushes would once more be returned to the north-south position (in line with field), and the pointer would again show zero ; the machine would then be flying east. Similarly, any other course can be flown by adjusting the

brushes to the correct angle and steering so that the meter hand stays on zero—dials on the face of the controller, of course, show the angle through which the brushes have been orientated in relation to the aeroplane.

From the foregoing, therefore, it will be seen that the Pioneer Earth Indicator Compass reduces to a minimum, if not entirely eliminates, the troubles and errors met with in the ordinary magnetic compass. Error due to lack of horizontality are overcome by the stabilising of the earth inductor generator. Again, since there is no pivot suspension, no inertia in the magnetic-responsive element, and no liquid to cause trouble by its viscosity, the generator is not affected by any movements of the aircraft except turning—which it is designed to discover and indicate.

SINGLE LANDING WHEELS FOR AIRCRAFT

An Interesting Loening Development

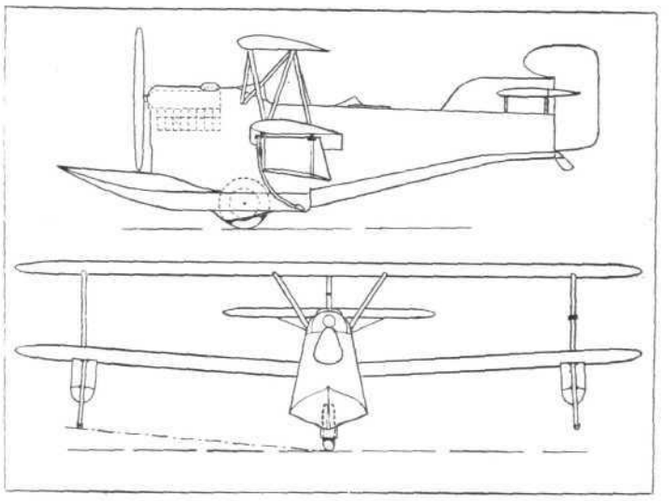
WE give this week some brief particulars of an interesting development in aircraft landing gears recently introduced by Grover Loening, the well-known American designer of the successful amphibian machines bearing his name. Several years ago Mr. Loening advocated the use of single-wheel landing gears for aircraft, and has since devoted some time and thought to the problem, which has resulted in the development referred to. It may, perhaps, be remembered that in the very early days of flying the R.E.P. monoplanes, produced by the French designer Robert E. Pelteric, had only one wheel mounted below the fuselage, and they appeared to function with more or less success.

Grover Loening has revived this practice in an improved form, and has recently been granted a basic patent by the Patent Office on the single-wheel amphibian aeroplane which appears to possess great possibilities.

It is stated that a little while back Loening presented a project to the U.S. Army Air Corps for the construction of a single-wheel amphibian 'plane involving his simple invention of its combination with skids on the side wing floats. He pointed out that the operation of the machine on the land would be practically identical to the operation of a single-float seaplane in the water. At first, however, the Engineering Division of the Army Air Corps was not convinced and required more concrete and convincing proof, but eventually they decided to carry out some experiments. The McCook Field Engineers, in co-operation with Loening, therefore obtained an old training biplane, removed its two-wheeled landing gear and fitted a single wheel in its place, with wing-tip skids in addition.

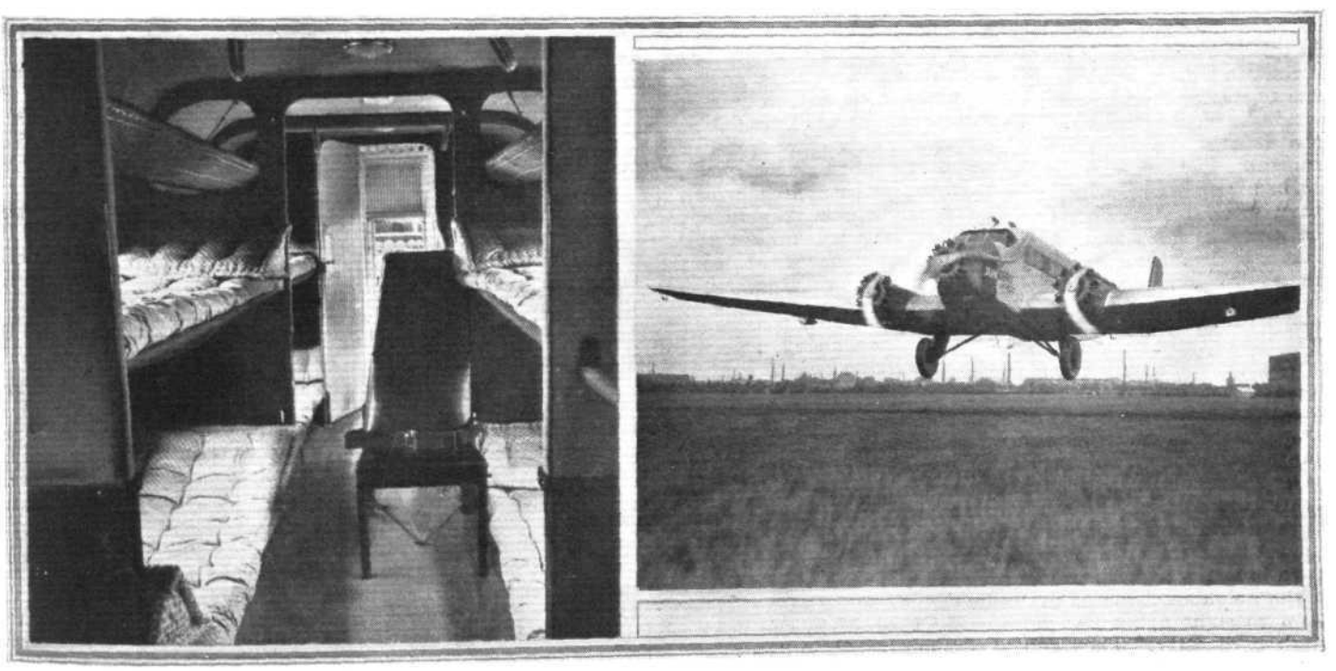
A series of tests were carried out with this experimental machine, with very satisfactory results, the machine handling with remarkable ease, both in landing and in taking off. As a result of these tests, the Engineering Division placed an experimental contract with the Loening Aeronautical Engineering Corporation for the first amphibian machine of this type, which is now under construction.

Some idea of the general principle of this scheme may be obtained from the accompanying diagrams, prepared from the patent specification, from which it will be seen that the machine itself is similar to the standard Loening amphibian.



SINGLE-WHEELED AMPHIBIAN : These two diagrams show the single landing wheel arrangement for an amphibian aeroplane developed by Grover Loening.

Embodied in the lower portion of the float-fuselage, however, is the single landing wheel, of which only a small portion projects outside the float. The extremely low drag offered by such an arrangement is at once apparent.



A BRISTOL-ENGINED JUNKERS G.31 : Fitted with three "Jupiter VI" engines, this large Junkers monoplane has a much better performance. The photograph on the left shows a Junkers equipped as a Red Cross machine with eight berths, and a chair for the attendant. Presumably, this arrangement might be equally suitable for a night-flying machine.

AIR DEFENCE EXERCISES.

By MAJOR F. A. DE V. ROBERTSON, V.D.

Wednesday, 27th,
Somewhere in "Westland."

I MENTIONED yesterday that when I last heard from the Headquarters of the Wessex Bombing Area yesterday, two raids were in progress, one by No. 39 Bombing Squadron (D.H. 9.A's) via Harwich, and one by No. 12 Bombing Squadron (Foxes) via Newhaven. I have not yet gathered the result of the latter raid. No. 39, however, had a very rocky time on its way inland, climbing and diving alternately to get through the clouds. It was, moreover, sighted from afar by a fighter squadron, but then the clouds came to its aid and it successfully dodged the deadly pursuers. The bombers found the London district partly obscured by clouds, but they succeeded in locating Kidbrooke and successfully bombed it. A very creditable piece of work for Squadron-Leader Champion de Crespigny's merry men!

Tuesday Night's Raiding.

The dirty weather which had been foretold duly came up from the Atlantic, but very considerately it postponed its arrival until 2 a.m. From sunset up to that hour the sky was almost clear, and the stars were bright. Conditions, in fact, were ideal for testing out the scheme of night defence. It was an exciting night for London, and the lessons learnt were eminently satisfactory.

Air Vice-Marshal Sir John Steel entrusted the night attack to the four twin-engined squadrons, Nos. 7, 9, and 58 (Virginias), and No. 99 (Hyderabads). These squadrons had been given a rest during the day, despite the fact that one evening paper described seeing Virginias bombing the Air Ministry. Was the wish father to the thought? The raids were carried out by single machines. But in order to test the defence scheme, it was arranged that the majority of the raiders should attack from the south and enter through a certain sector where the searchlights were massed. In all, 16 attacks were made up through this illuminated corridor, which almost seemed in danger of becoming an aerial Oxford Street. So 12 other raids were allowed to enter London from the north where the defence preparations were at a minimum and conditions were all in favour of the attack. Londoners, especially those in Hampstead and Highgate, gnashed their teeth as they thought of the searchlights, guns, and fighter squadrons which had been withdrawn to Manchester. The roar of the Lions brought many good citizens from their beds to the window, and occasionally they glimpsed the navigation lights of their guardian fighters as they ranged through the darkness hunting the unseen foe. It was the rule that during night operations fighters should show lights but bombers should only flash them on for a second or so if they saw fighters near and feared the risk of a collision.

Along the coast the special constable observers were ranged in full force with their instruments for detecting raiders and estimating their height. No wireless was employed during the operations, and these watchers were the only source of intelligence and reports. They did splendid work and kept the defence well informed of the approach and progress of raiders. The searchlights, manned by Royal Engineers, were, as has been said, massed in one tract. The area in which they worked was only half the depth which they would be given in war, and this somewhat cramped their style. But they, too, were splendidly successful. Sir Robert Brooke-Popham relied for the defence of this illuminated corridor upon the Woodcocks of No. 3 and the Siskins of No. 56 Fighter Squadrons. Squadron Leaders Robb and Elliott-Smith did not fail him. For night work each flight of fighters was stepped down from the centre to the circumference of the defended area, and each machine had to keep its altitude. The lowest one would attack first if it got the chance, then the second, and finally the highest. The fighter pilots say that they do not need actually to see an enemy before starting an attack. They rely upon the searchlights getting good information, and where they see two or three beams converging, that is good enough for them. They know that a raider must be somewhere near there, and they go to investigate. There is a certain amount of infused light in the neighbourhood of the beams which sometimes enables them to sight a bomber more easily than when the beams catch it directly. They can also come below and look upwards, and often can see the bomber against the starlit sky or perhaps against the beam which is glaring up above it.

Nos. 3 and 56 had good hunting that night, and none of the 16 raiders in that sector would have got through to their objectives. The defence scored heavily where it was fully organised. The attacks through the darkened north could hardly be held to teach any lessons at all.

There were no mishaps, though five of the bombers could not make their home aerodromes and had to land on others.

IN A CAMERA OBSCURA,
Wednesday, 27th.

Another day of variable weather, eminently suitable for raiding. Bright sunshine alternated with local thunderstorms and rain showers. In the morning I went to the target at Chelsea and was permitted to see the portable camera obscura. It was a simple but effective affair. The working had hardly been explained to me before a raid came over. Some 12,000 feet up, but still below the layers of moving clouds, we spotted a flight of three bombers—D.H.9a's they seemed to be—and we afterwards learnt that they belonged to No. 207 Squadron. They soon came on to the chart of the camera obscura, moving across its outer circumference. It was fascinating to watch the three little shadow dots tracing their way across the paper. A metronome was set working, and at every tick a pencil mark was made on the paper where the leader's machine was. Afterwards the track was properly connected up. Thus a complete record was kept. The flight came nowhere near the centre of the chart, which indicated the actual target, and passed away out of sight. We learnt afterwards that though we could see them so distinctly, the observers could not see the target at all, probably on account of ground mist. In a few minutes they returned and gave the bombing signal by buzzing on the wireless. But when they did so they were clean outside the scope of the camera obscura. The Duke of York's Headquarters had escaped, but there was probably dirty work at some other cross roads. It was not a successful raid, although the flight got home without being intercepted.

In fact, No. 207 Bombing Squadron did not have a very good day. Earlier that morning it had sent a formation in over Foulness. It reached Chelsea all right and presumably bombed it. But on its return it was caught by Nos. 56 and 111 Fighter Squadrons 4 miles east of Romford and suffered casualties. In the evening it made two more raids. One flight came over Manston at 18·33 hrs. but was attacked by three Grebes over Chiselhurst. Another flight crossed the coast at Rye at 19.00 hrs., and was intercepted over Dulwich by No. 25 Fighter Squadron. The umpires declared that one Grebe and one D.H.9a were shot down.

No. 11 Bombing Squadron sent up two raids that day. One was driven back by low clouds and never reached London. In this sort of weather it is not easy to get from Netheravon to London. The second raid came over Shoreham. It was twice caught by No. 32 Fighter Squadron, once over Epsom and again near Kenley. This raid would not have been able to penetrate into London.

No. 12 Bombing Squadron did four raids in the day. The first crossed the coast at Bexhill and made good practice on Chelsea without interference. The second came in from Bognor, bound for Uxbridge, but was caught near the coast by No. 43 Fighter Squadron from Tangmere and was shot to pieces. Both the afternoon raids were successful. One flight attacked via Bexhill at 18.15 hrs. and bombed Uxbridge without interference. Another flight came over Shoreham at 18.35 hrs. and dropped its bombs on Uxbridge. It was sighted by No. 41 Fighter Squadron over the target and on its return was attacked over Sutton. But it seems that Foxes are formidable in a fight, and no casualties were given against the bombers. This was the first instance during these operations on which an attack by fighters was adjudged to be a failure.

No. 39 Bombing Squadron sent two flights over, one at 18.15 over the Naze, and the other at 18.30 over Harwich. Both raids were successful. The former encountered No. 19 Fighter Squadron to the south of Brentwood, but got free of them without being attacked. The other flight met no defenders. Both dropped their bombs on Chelsea.

In the evening the weather prospects were doubtful. I made enquiries of the experts at 21.00 hrs., and they thought there was a chance of night bombing, so I went off to Biggin Hill, hopeful of seeing the searchlights really busy. I had had a glimpse at their workings on Monday, but wanted to see more. However, by 23.00 hrs. everything was hopelessly bad, and the night operations were cancelled. As a result the four twin-engined squadrons had a good long rest. The pilots had been sleeping during the day, and must have

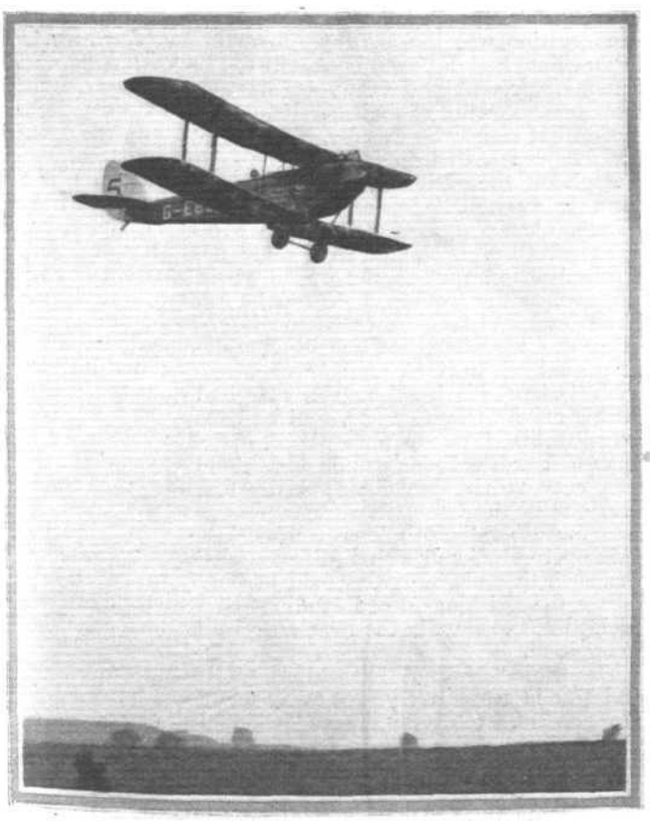
(*Concluded on page* 549)

EXPRESSED statistically, the account of the King's Cup Air Race would read as follows: 26 entries, 16 starters and 6 machines to finish the race. Regarded in this somewhat cold-blooded way, the race was undoubtedly what is colloquially expressed as a "wash-out." The absence of ten machines at the start, or at least of nine machines, since one of the ten was actually on the starting line, is in the main accounted for by the peculiar effect of this year's handicapping formula, which all but ruled out a large number of the machines entered. The reasons for the falling out of 10 of the 16 starters will be referred to later, but first it may be of interest to show why so many entries were withdrawn as a protest against their handicaps.

The following table was prepared before the race, and is based upon the assumption that the three de Havilland "Moth X" machines were capable of a speed of 103 m.p.h. Actually at least one of them, Mr. Butler's, was a good deal faster than that, but even the lower figure serves to show how the formula worked. (The formula was given in *The Aircraft Engineer* in last week's issue of FLIGHT, and thus there should be no need to repeat it here. The actual curve from which the constant K for air-cooled engines was calculated was published in FLIGHT of June 2, 1927.) Taking as a basis a speed of 103 m.p.h. for the "Moth X" machines, and giving the rest the handicap allowances which they obtained in accordance with the formula, the machines would have to do the following speeds in order to finish level with the three "Moth X's.":—

No.	Machine and Engine	Speed m.p.h.
6	Anec II, "Cherub"	75·4
4	Halton biplane, "Cherub"	81·8
27	C.L.A 4, "Cherub"	84·7
5	Moth, "Cirrus I"	95·9
9	Moth, "Cirrus I"	99·25
26, 18, 15	Moth, "Cirrus II"	103·0
12	Avian, "Cirrus II"	105·8
10	Widgeon III, "Genet"	106·0
2	Bluebird, "Genet"	108·0
3	Moth, "Cirrus II"	108·5
22	Widgeon III, "Cirrus II"	110·0
23	Avian, "Cirrus II"	112·5
8	Avian II, "Cirrus II"	112·5
13	Alpha-Avian, "Alpha"	116·8
14	Avian, "Cirrus II"	118·5
24	D.H.9, "Nimbus"	141·7
19	Vespa, "Jupiter"	149·5
7	Horsley, "Condor"	154·0
1	F.6, "Viper"	157·0
16	Tiger Moth, "Cirrus II"	162·0
20	Vixen, "Lion"	165·2
25	Boreas Martinsyde, "Nimbus"	179·0
21	Badminton, "Jupiter"	208·5
11	Avenger, "Lion"	244·0

It will be seen that the fast, high-power machines were entirely ruled out. Thus the Hawker "Horsley" would have had, on this basis, to do 154 m.p.h., the Vickers "Vixen" 165·2 m.p.h., the "Boreas-Martinsyde" 179 m.p.h., and the Avro "Avenger" 244 m.p.h. If one were to take as a basis the speed of 109·6 m.p.h. actually put up by Mr. Butler on his "Moth X," the results would, of course, become even worse for the fast machines, and the "Avenger" would then have had to do 286 m.p.h. It was, therefore, scarcely to be wondered at that many entrants withdrew their machines, since to fly the race would have entailed heavy expense, wear and tear on machines and engines, insurance, etc. A few of those who, appearing hopelessly outclassed, nevertheless decided to fly in the race deserve credit as splendid



["FLIGHT" *Photograph*

WINNING THE KING'S CUP RACE: Mr. W. L. Hope crossing the finishing line on his "Moth" with "Cirrus I" engine.

KING'S CUP RACE: Table of Handicap Allowances, Lap Times and Lap Speeds.

Racing No.	Identification letters.	Machine.	Engine.	Entrant.	Pilot.	Handicap Allowance.	First Circuit. Lap Time.	First Circuit. Lap Speed.	Second Circuit. Lap Time.	Second Circuit. Lap Speed.	Third Circuit. Lap Time.	Third Circuit. Lap Speed.	Total Flying Time.	Average Speed	Position.	Racing No.
						h. m. s.	h. m. s.	m.p.h.	h. m. s.	m.p.h.	h. m. s.	m.p.h.	h. m. s.	m.p.h.		
6	JO	"A.N.E.C. II"	"Cherub"	Norman H. Jones	Norman H. Jones	4 57 48	2 25 0	74·7	Retired after hitting bird with propeller.							6
4	OO	"Halton Biplane"	"Cherub"	Wing-Comdr. Breese	Flt.-Lt. Trench	4 23 35	Retired owing to running out of fuel.									4
27	PB	"C.L.A. 4"	"Cherub"	Flt.-Lt. N. Comper	Flt.-Lt. Comper	4 9 43	Non-starter.									27
5	MB	"Moth"	"Cirrus I"	W. L. Hope	W. L. Hope	3 25 09	1 52 15	96·5	2 0 11	90·2	1 57 48	92·0	5 50 14	92·8	Winner	5
9	MV	"Moth"	"Cirrus I"	Philip S. Foster	A. B. H. Youell	3 16 25	Non-starter.									9
26	SK	"Moth X"	"Cirrus II"	Sir H. Bowden	Bernard Martin	3 1 49	1 58 1	91·8	1 54 9	94·9	Retired.					26
18	RT	"Moth X"	"Cirrus II"	S. L. F. St. Barbe	Capt. F. G. M. Sparks	3 1 49	1 47 33	101·7	Retired with burst petrol tank.							18
15	QH	"Moth X"	"Cirrus II"	Alan S. Butler	Alan S. Butler	3 1 49	1 40 43	109·6	Retired owing to valve trouble.							15
12	QL	"Avian"	"Cirrus II"	A. V. Roe	D. A. N. Watt	2 53 39	Retired owing to losing his way.									12
10	RQ	"Widgeon III"	"Genet"	"Harold Brooklyn"	"Harold Brooklyn"	2 53 14	1 51 25	97·2	1 58 37	91·4	1 52 42	96·2	5 42 44	94·8	Fifth	10
2	RF	"Bluebird II"	"Genet"	Col. the Master of Sempill	Col. the Master of Sempill	2 49 30	Retired with oil trouble.									2
3	PU	"Moth"	"Cirrus II"	Lady M. Bailey	Lady M. Bailey	2 45 50	1 53 34	95·4	Retired with broken valve cotter.							3
22	RL	"Widgeon III"	"Cirrus II"	Robert A. Bruce	Capt. MacDonough	2 41 28	1 42 48	105·3	1 49 37	98·9	1 43 24	104·8	5 15 49	102·8	Second	22
23	RR	"Avian"	"Cirrus II"	J. F. Leeming	H. A. Brown	2 37 34	Non-starter.									23
8	RS	"Avian II"	"Cirrus II"	Henry Fildes	Mrs. Elliott-Lynn	2 37 34	Non-starter.									8
13	SD	"Alpha-Avian"	"Alpha"	Sir Wm. Letts	Bert Hinkler	2 24 36	Non-starter.									13
14	QV	"Avian"	"Cirrus II"	Sir Wm. Letts	—	2 20 43	Non-starter.									14
24	KO	"D.H.9. Nimbus"	"Nimbus"	Lt.-Col. Barrett-Lennard	W. G. R. Hinchliffe	1 35 57	1 27 42	123·5	1 30 27	119·7	1 24 36	123·0	4 22 45	123·6	Fourth	24
19	LD	"Vespa"	"Jupiter"	Com. Sir Trevor Dawson	Sqdn.-Ldr. Payn	1 24 07	1 28 34	122·3	1 33 47	115·5	Retired.					19
7	—	"Horsley"	"Condor"	T. O. M. Sopwith	Flt.-Lt. P. W. S. Bulman	1 17 31	1 27 22	124·0	1 33 42	115·8	1 26 15	125·6	4 27 19	121·5	Sixth	7
1	DK	"F 6"	"Viper"	Leslie Hamilton	F/O. Nevill Vintcent	1 13 53	Non-starter.									1
17	RV	"Tiger Moth"	"Cirrus II"	Sir Charles Wakefield	Capt. H. Broad	1 7 19	Retired owing to bumpy weather conditions.									17
20	JP	"Vixen"	"Lion"	Douglas Vickers	Flt.-Lt. Scholefield	1 3 32	1 14 50	144·7	1 18 41	137·7	1 15 52	142·8	3 49 23	141·6	Third	20
25	QJ	"Boreas Martinsyde"	"Nimbus"	Lt.-Col. M. O. Darby	Sqdn.-Ldr. H. W. G. Jones	0 47 57	Non-starter.									25
21	MK	"Badminton"	"Jupiter"	Sir G. Stanley White	Capt. F. L. Barnard	0 22 32	Non-starter.									21
11	ND	"Avenger"	"Lion"	Sir K. Crossley	Flt.-Lt. S. N. Pope	Scratch	Non-starter.									11

sportsmen, and one of them, Mr. Scholefield, on the Vickers "Vixen," was rewarded by gaining third place.

The Joke

The question one naturally asks is "why was the defect in the handicap formula not discovered sooner?" The answer to that is probably that each firm examined how its own machines would fare under the formula, and finding that in general the formula under-estimated their speed, were content and did not trouble to ascertain what would be the effect of the formula on other people's machines. And in any case it is doubtful whether the characteristics of some of the machines were sufficiently well known to firms other than the actual makers. But the Air Ministry, whose airworthiness department must have had all the particulars of all the machines, should have discovered the snag. Whether it did do so and said nothing, or whether, deciding that it was not its province to say anything, it remained in its own watertight compartment, we are naturally not in a position to say. But it seems extraordinary that the error should not be discovered until the day before the race or so. By that time it was, of course, too late to make any changes, and the race had to proceed on the original handicap basis. That the result was disappointing is not to be wondered at. Everyone was fooled, and at Hucknall it was most amusing to hear everyone disclaiming any responsibility for the formula. Nobody would own the poor thing, and the fact of the matter is that we are all equally to blame; the originators for not having sufficiently thoroughly tried out the formula on a wide range of types, the chief designers of the firms, and the technical press for not having discovered the effect of the formula on the faster machines. It is no manner of use trying to put the blame on somebody else. We have all been beautifully "had," and we might as well admit it. The next step will be to alter the formula. It has been suggested that this might be done by raising the value of the constant K from 12 to 19·5, or even to 22. Personally, we cannot see that this would have the desired result. Instead of ruling out the faster machines, one would, it seems to us, merely rule out the slow types. However, this is not the place to go into that subject, and we will return to the race itself.

The Race

The weather on Saturday morning was far from promising. The clouds hung low, and occasionally there was a slight shower. On the aerodrome at Hucknall the prospects were being discussed, and needless to say, the main topic of conversation was the handicap formula. A certain number of machines had not even been sent to Hucknall, while others, although present and ready to start, were reported to be non-starters owing to their handicaps.

The first man away was Mr. Norman Jones on the A.N.E.C. II, followed a little more than half an hour later by Mr. Trench on the Halton biplane "Mayfly," which had been remarkably well "cleaned up," and looked as if it should stand a chance of overtaking the A.N.E.C. Comper, on the Cranwell CLA 4, should have gone next, but he had discovered that he was using up oil at an alarming rate, and decided, as the trouble could not be located, not to start in the race. The trouble was found later to be nothing worse than an oil washer that had become displaced, but by then it was too late to start. Hope was away next on his "Moth" with "Cirrus Mark I" engine. He had done a lot of work on his machine and engine, and had really succeeded in increasing his speed to an amazing extent; 15 in. of extra span had reduced his formula speed, and as the actual speed was very much above normal the machine was from the first one of the favourites. The next machine due to leave was the other "Moth" with Mark I "Cirrus," but on his way up to Hucknall Youell discovered that his consumption was such that his tankage would be barely sufficient, and so, rather than risking forced landings due to lack of fuel, he decided not to start in the race, a decision which one is bound to applaud.

The three "Moth X" machines, piloted by Butler, Sparks and Martin respectively, got away at 9.56 a.m., and Dudley Watt on No. 12 "Avian" with "Cirrus II" engine, left some 8 mins. later, followed in a few seconds by "Harold Brooklyn" on the Westland "Widgeon III" with Armstrong-Siddeley "Genet" engine.

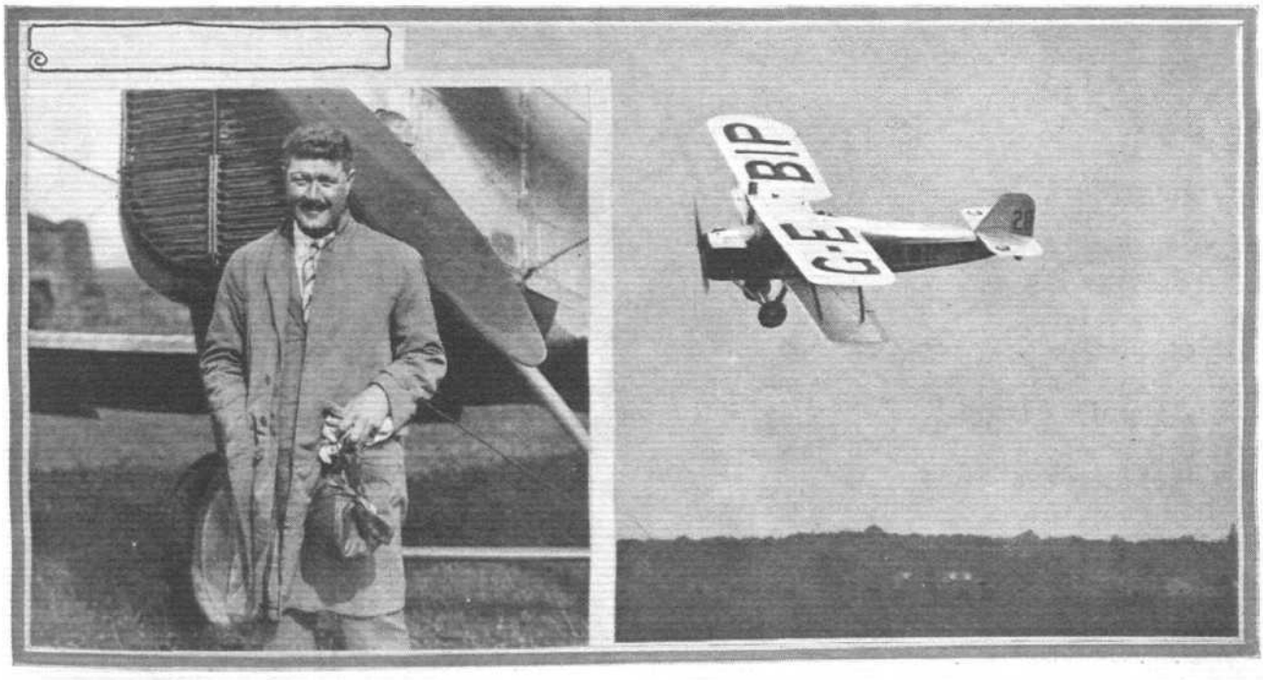
For some time machines took off promptly and unemotionally to their appointed time, and it was not until a little later that the first "casualty" occurred, Col. Sempill returned on the Blackburn "Bluebird," having discovered that his oil temperature rose unduly and the pressure dropped. Under the circumstances, he decided to retire.

["FLIGHT *Photographs*

SECOND MAN HOME IN THE KING'S CUP RACE : Capt. McDonough finishing on the Westland "Widgeon III" with "Cirrus II" engine, and, on the right, being led in by Sqdn.-Leader England and Colonel Darby.

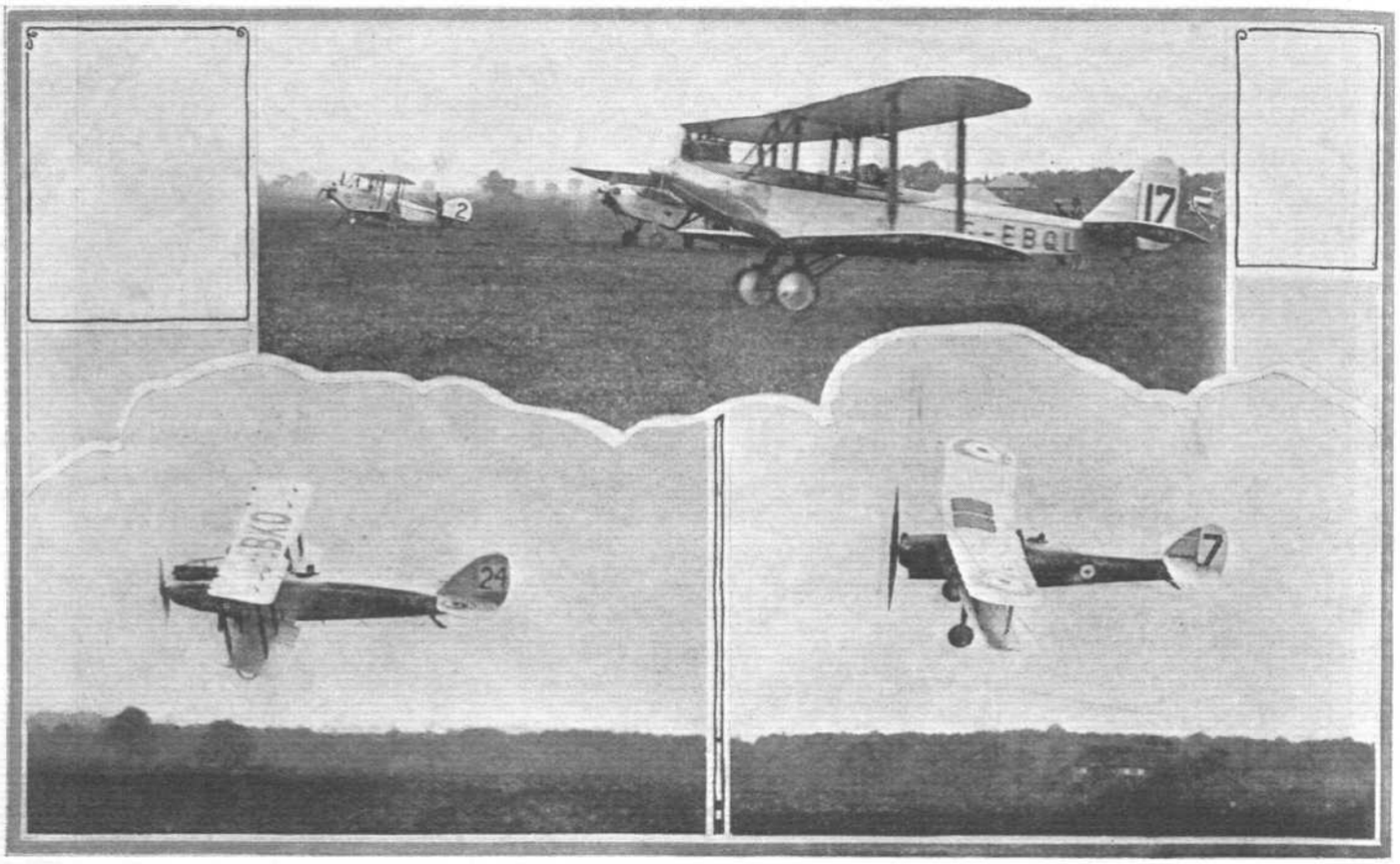
When No. 13, Hinkler's Avro "Alpha-Avian," was brought out of its shed there was another mishap in store. The engine refused to start in spite of frantic efforts, and when Mr. Reynolds dropped his red flag the "Alpha" was still obstinate. The minutes went by, and still there was no response. Ultimately, it was discovered that a cracked carburettor casting was responsible. An air lock had been found in the petrol system, and in replacing the cap in the carburettor after getting rid of the lock, it seems possible that the persuasive methods used may have been a little too vigorous. A slight flaw in the casting may have caused a weak spot, and the crack developed. At any rate, the "Alpha-Avian" was out of the running. Yes, we know—No. 13, and all that!

In the meantime, Mr. Jones had returned from his first lap on the ANEC II, having covered the 180 miles in 2 hrs. 25 mins., a very creditable performance, as the speed, in spite of a high wind, worked out at 74·7 m.p.h. Trench was



["FLIGHT" *Photographs*

THIRD MAN IN THE KING'S CUP RACE: Flight-Lieut. Scholefield and his Vickers "Vixen" with Napier "Lion" engine.

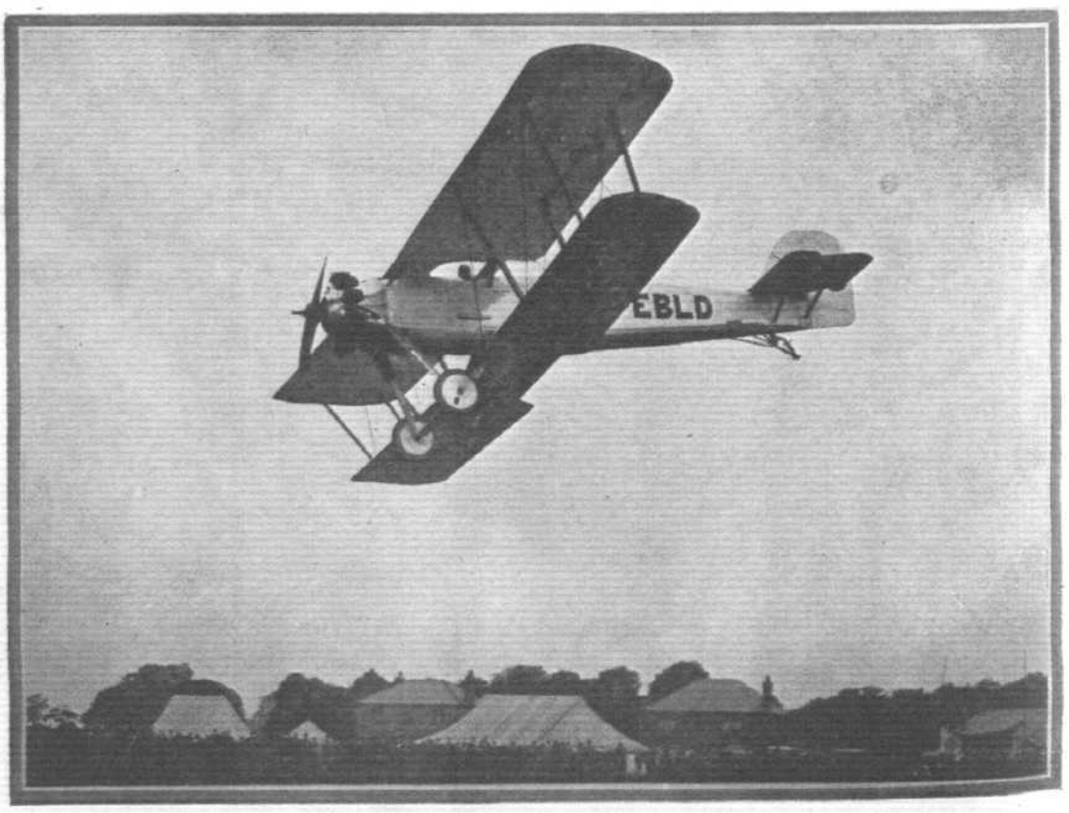


["FLIGHT" *Photographs*

SOME STARTERS IN THE KING'S CUP RACE: Above, D. A. N. Watt gets away on his "Avian." In the background, the Blackburn "Bluebird" and the Westland "Widgeon III" waiting to start. Below, on the left, Hinchliffe off on the D.H.9 "Nimbus," and on the right, Mr. Bulman roaring away on the Hawker "Horsley," the only machine to carry "rings" in the race.

expected home next, but he became overdue and still there was no sign of him. Ultimately he arrived very late, having had to land owing to running out of petrol when some six miles from home. The cause could not be ascertained, but he had lost so much time that to continue the race was quite hopeless, and he retired.

Nothing very exciting happened until Broad brought out the little "Tiger Moth" with "Cirrus II" engine. The machine was naturally the object of much curious inspection, and it was impossible not to fall in love with it. It is so small and of such splendidly clean lines that very naturally it takes the eye of all who see it. On the drop of the flag Broad got away, but the acceleration seemed somewhat slow, even allowing for the fact that at low forward speed the



A Curious Mishap: Sqdn.-Leader Payn landing the Vickers "Vespa" after the second lap. On the third lap the Hucks coupler on the propeller (visible in the photograph) came adrift and caused some damage, compelling Payn to land.

["FLIGHT" *Photograph*

propeller is naturally very inefficient. The run taken in getting off seemed rather long, but at last the machine rose and, once in the air, climbed well. The explanation was later found to be that Broad during a bump on the ground accidentally half-closed his throttle and did not discover it until later. Otherwise the take-off would have been much better.

The last machine to get away was the Vickers "Vixen," piloted by Scholefield, who, owing to the non-starting of the "Boreas-Martinsyde," Bristol "Badminton," and Avro "Avenger," became scratch man.

By this time several of the machines had returned after completing the first lap. Of the three "Moth X" machines Butler was back first on No. 15, having covered the circuit at an average speed of 109·6 m.p.h. which was quite surprisingly good, and made Butler look a likely winner of the race. It began to look as if his only serious rival would be Hope on the "Moth" with Mark I "Cirrus." Butler complained he hit a bump his hand moved the control stick a little, but that little was sufficient to send the machine either into a "zoom" or a dive. He then decided to abandon the race. In view of the fact that pilots flying heavy, powerful machines complained of the bumps, it is not surprising that Broad had a very uncomfortable time of it, and no one would dream of blaming him for giving up. The "Tiger Moth" is still too sensitive on the controls, but that is one of the teething troubles which will doubtless soon be put right. *His speed from Hucknall to Spittlegate worked out at* 166 *m.p.h.!* For a time some anxiety was felt for Butler, who failed to put in an appearance, but ultimately he arrived at the aerodrome without his machine and reported that he had had a forced landing, the trouble being either valves or valve springs. This left but one of the three "Moth X" machines in the race—No. 26 flown by Bernard Martin—and as he had covered the first two laps at 91·8 m.p.h. and 94·9 m.p.h. respectively, it was thought

["FLIGHT" *Photograph*

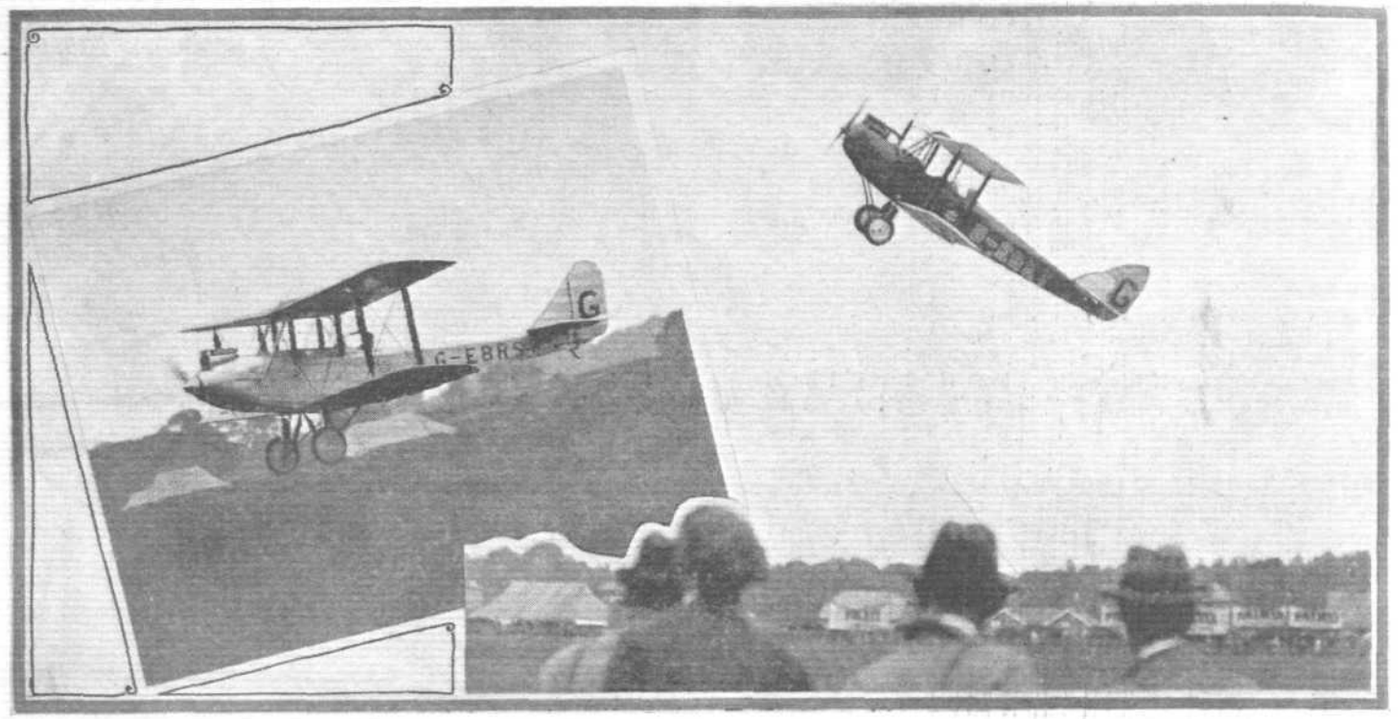
THE KING'S CUP RACE: His Grace the Duke of Portland presenting the Cup to Mr. Hope.

of suffering from the effect of exhaust fumes, his engine having no exhaust pipes and the fumes finding their way into the cockpit. Before starting on his second lap he was equipped with a respirator which, it was hoped, would enable him to carry on.

And now commenced the series of mishaps which was to result in only six machines finishing the course. Jones had the misfortune to hit a bird with his propeller, and had to land his A.N.E.C. at Skegness. Lady Bailey broke a valve cotter, and was compelled to land in the vicinity of Doncaster, much to everyone's regret. Lady Bailey is such an excellent sport that all wish her all possible luck in her racing. Sparks burst his petrol tank before leaving on the second lap, and Dudley Watt lost his way in the first circuit and retired. Broad was reported to have landed the "Tiger Moth" safely at Spittlegate, and when he returned to Huckall minus his machine (unless he had it hidden away in one of his pockets) he reported that he found the weather so "bumpy" that he was bounced about and every time that he would be unlikely to catch up Hope, who now looked likely to be the winner.

Bulman was not making the speed he should do on the Hawker "Horsley," and as he had Mr. Gillman with him as navigator this was not likely to be due to bad course-keeping. Later Bulman reported that his engine was not running too well, and that he had later found the trouble to be due to dirt in the carburettor.

While all these woeful happenings were taking place, some very good exhibition flights were being given. Sqdn.-Ldr. Noakes did "crazy flying" on the old original "Moth," G-EBKT, the first "Moth" every built and, later, on Mrs. Eliott-Lynn's "Avian," G-EBRS. Mrs. Eliott-Lynn herself gave a very good exhibition of looping, and Comper, having got his oil to "stay put," went up and gave a splendid show on the little C.L.A. 4, which seemed to fly very strongly, although only fitted with the 30 h.p. Bristol "Cherub" engine. Mr. Sparks also gave a good display on "Katie" (KT), and Mr. Fogarty rolled the "Avian"



["FLIGHT" *Photographs*

"CRAZY-FLYING" AT NOTTINGHAM: Sqdn.-Leader Jack Noakes demonstrating the error of ordinary aerodynamic theory. Left, on Mrs. Eliott-Lynn's Avro "Avian," and right, on the first de Havilland "Moth" ever built, the faithful old "Katie" (KT).

(RS) all over the aerodrome, first on one wheel and wing tip and then on the other. The final "casualty" was Sqdn.-Ldr. Payn on the Vickers "Vespa." He had the misfortune that the Hucks coupler on his propeller boss (the fitting used for starting the engine by means of a Hucks starter) came adrift, hit the propeller and went through one of the wings. As he did not know precisely what damage had been done he decided to land.

The finish of the race was a somewhat tame affair, Hope coming in as a winner (and well he deserved it) about ten minutes ahead of the second man (McDonough on the Westland "Widgeon III" with "Cirrus II" engine). Mr. Scholefield was third on the Vickers "Vixen," Napier "Lion," arriving about 20 minutes behind the winner.

Mr. Hope received a well-deserved ovation, and later the King's Cup was presented to him by His Grace the Duke of Portland.

The following telegram from His Majesty the King was received in the evening: Telegram, O.H.M.S. Royal Yacht, Cowes: Perrin, Secretary Royal Aero Club, Victoria Hotel. The King heartily congratulates Mr. Hope on his fine performance in winning His Majesty's Cup.—WIGRAM.

For the King's Cup Race: The Bristol "Badminton" with Bristol "Jupiter" engine on which Captain F. L. Barnard met with a fatal accident when he stalled the machine and crashed near Filton last week. Note the unusual plan form of the wings.

FLIGHT
AIRCRAFT ENGINEER AIRSHIPS

THE NOTTINGHAM FLYING MEETING

Good Races at Hucknall on Monday

THE weather on Sunday and Monday was in striking contrast with Saturday's, the flying conditions being ideal and the sun much in evidence on both occasions. Sunday at the aerodrome was devoted to exhibition and stunt flying by many of the competitors, and to passenger flights. We have not the space to spare for a detailed description of the Sunday's proceedings, and can only say that throughout the afternoon some very enjoyable and interesting flying was provided. One thriller worthy of particular mention was the arrival at the aerodrome, from London, of Capt. Broad in the second D.H. "Tiger Moth" fitted with the D.H. engine. He completed the journey from Stag Lane to Hucknall in 39 mins. 50 secs.—at an average speed of about 170 m.p.h.!

On the Monday an excellent programme of racing was provided, which from the spectators' point of view was much more interesting than Saturday's event, for from 11.30 until the evening no fewer than six racing events were got through with hardly a break, and, also, in each of these events the machines were in view for a greater part of the time. It was, therefore, possible to follow each competitor's progress by eye instead of by the event board.

The course in each case was the same—a triangular one of about 8½ miles, in which "rounded" corners, or two turning points about 200 yards apart, were used instead of the usual single sharp-angled turning-points. This made for much greater safety, especially when a "bunch" of competitors rounded a corner together, while for safety's sake, also, the number of competitors flying at the same time in any event was limited to six, so that when the entrants exceeded that number, the race was run in heats.

It was bright and sunny early during the proceedings, and then later on a thin cloud-film provided a welcome relief from the glare; there was a gentle breeze blowing and visibility was good. The attendance grew from "hundreds" in the morning to "thousands" in the afternoon; Mr. Levine who flew with Mr. Chamberlin from New York to Germany recently, was an interested spectator, having flown to Hucknall in a specially chartered Imperial Airways machine. Another notable visitor was the Duchess of Bedford—who, needless to say, was unable to keep on the ground all the time, so went up in her "Moth" piloted by C. D. Barnard.

Promptly to time the first event was started at 11.30 a.m.—the Papplewick Stakes Low-power Handicap for prizes of £40 (1st), £25 (2nd), and £10 (3rd), presented by Mr. Julien Cahn. It was flown over one lap of the course and produced five starters, as follows:—No. 6, N.H. Jones, on A.N.E.C. II 'JO (handicap 42 secs.); No. 4, Le Poer Trench on Halton biplane 'OO (handicap 32 secs.); No. 30, J. C. Mitchell on Bristol "Brownie" 'JM (handicap, 29 secs.); No. 27, N. Comper on CLA 4 'PB (handicap 17 secs.); and No. 34, C. Mackenzie Richards, on D.H. 53 'QP (scratch).

This produced quite a good finish, No. 4 crossing the line first followed by Nos. 27 and 30 within a few seconds of each other, then came No. 34 and finally No. 6. No. 4 (Trench), however, was disqualified, so 1st place went to No. 27 (Comper), time, 6 mins. 52 secs.; 2nd place to No. 30 (Mitchell), time, 6 min. 58 secs., and 3rd place to No. 34 (Mackenzie Richards) time 7 mins. 6 secs. The winner's speed was 76¾ m.p.h.

There being a dozen entries for the next event—the Private Owners' Handicap for the Pelham Stakes of £100 presented by Messrs. Boots, Nottingham—this was flown in three heats and a final, with four competitors in each heat and the first two from each heat in the final. All were over one lap of the course.

"FLIGHT" *Photograph*

THE NOTTINGHAM FLYING MEETING: Event 1 on Monday's programme—F/O. Mackenzie Richards starting at scratch in the Papplewick Stakes on the D.H. 53.

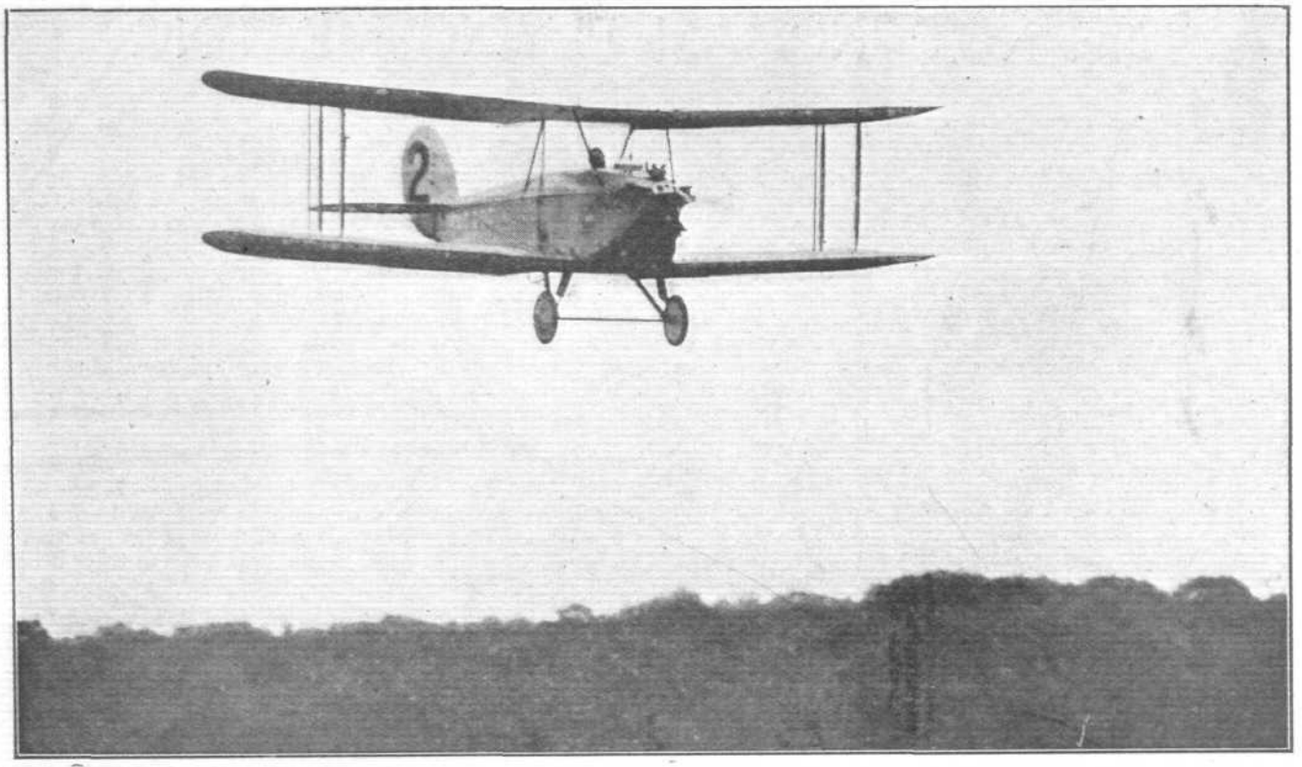
The starters in heat 1 were:—No. 6, N. H. Jones on A.N.E.C. II 'JO (2 mins. 24 secs.); No. 2, The Master of Sempill on Blackburn "Blue Bird II" ("Genet") 'RF (1 min. 16 secs.); No. 8, Mrs. S. C. Eliott-Lynn on Avro "Avian II" ("Cirrus II") 'RS (45 secs.); and No. 26, Bernard Martin on D.H. "Moth X" ("Cirrus II") 'SK (34 secs.). Leslie Hamilton, on his Martinsyde was the last entry, but was a non-starter.

In this heat Martin, who represented the Nottingham Aero Club, came in a good first, his time being 6 mins. 58 secs. and his speed 96½ m.p.h., No.2 (Col. Sempill) following 4 secs. behind (time, 7 mins. 2 secs.), and 7 secs. later No. 8 crossed the line (time 7 mins. 19 secs.), No. 6 (Jones) once again coming in last, with 7 mins. 32 secs.

With but little delay the four competitors in the second heat got away as follows:—No. 31, F./O. Scroggs on the Westland "Wood Pigeon" 'IY (2 mins. 50 secs.); No. 3, Lady Bailey on her "Moth" 'PU (51 secs.); No. 32, Capt. G. de Havilland, on "Moth X" SF (45 secs.); and No. 36, M. L. Bramson on S.E. 5A 'IA (scratch).

Lady Bailey, flying an excellent course, quickly obtained the lead, which she maintained throughout, crossing the line first in 6 mins. 22 secs. (at 92 m.p.h.), Bramson just failing to overhaul her by 5 secs. (time 6 mins. 27 secs.). The third in was No. 32 (Capt. de Havilland) in 6 mins. 44 secs.), No. 31 (Scroggs) finishing last, 38 secs. later.

In the last heat the four starters were No. 9, Sq.-Ldr. Noakes



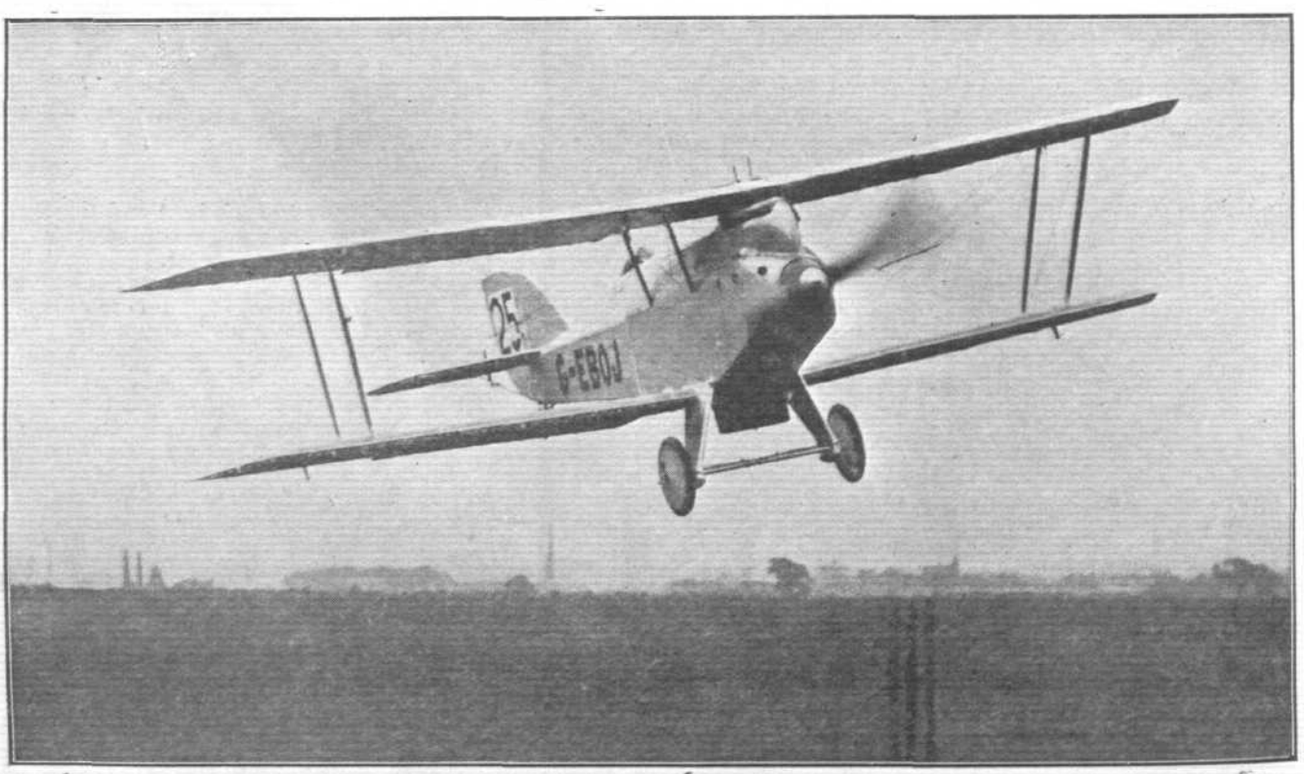
["FLIGHT" *Photograph*

THE NOTTINGHAM FLYING MEETING: Col. The Master of Sempill on the Blackburn "Blue Bird" in heat 1 of the Pelham Stakes.

on D.H. "Moth" 'MV (1 min. 25 secs.); No.10, H. Brooklyn on Westland "Widgeon III" ("Genet") 'RQ; No. 18, A. C. M. Jackaman on D.H. "Moth X" 'RT (22 secs.); and No. 22, Capt. W. J. McDonough on Westland "Widgeon III" ("Cirrus II") 'RT (26 secs.). This heat provided a very close finish, No. 22 (McDonough) overhauling his rivals one by one and crossing the line first in 5 mins. 58 secs. (99¼ m.p.h.) only 2 secs. ahead of No. 9 (6 mins.) with No. 18 third, ahead of No. 22 by 2 secs. No. 10 came in last, 4 secs later.

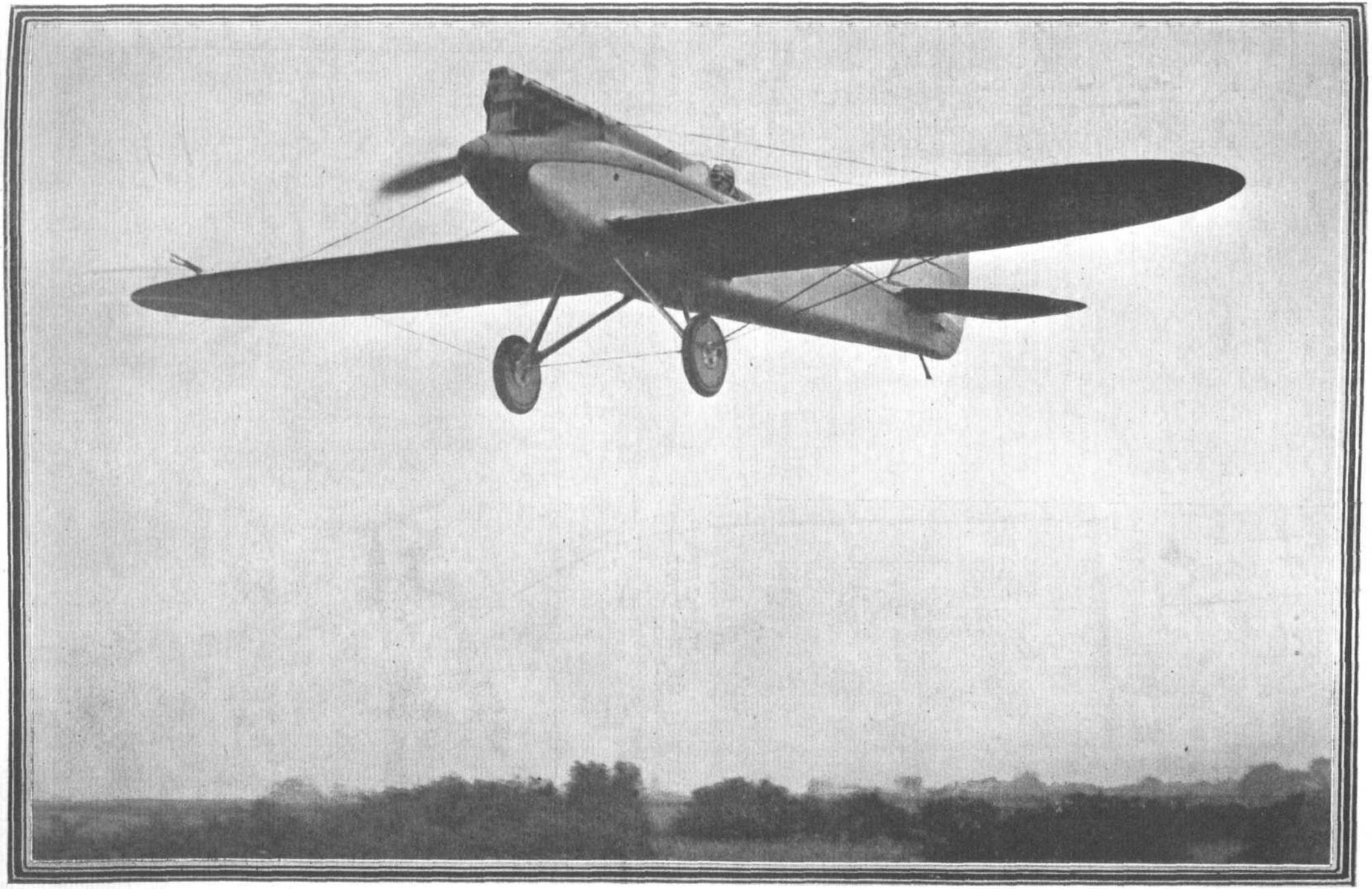
After this last heat there was an interval for lunch, during which the tiny "Tiger-Moth," with D.H. engine, was brought out on to the 'drome. It was soon completely lost to view by a crowd of admirers, and all that those outside the ring could see was a certain amount of activity on the part of some white-overalled figures tending something on the ground! Just like surgeons carrying out an operation.

However, a healthy roar eventually scattered the crowd, exposing to view the "Tiger-Moth" and Capt. Broad's head. After a final run of the engine, Broad took off and shot up into the air like a rocket. Up and down and across the



["FLIGHT" *Photograph*

THE NOTTINGHAM FLYING MEETING: The winner of the High Power Handicap—Sqdn.-Leader Hubert Jones on the "Boreas-Nimbus-Martinsyde."



["FLIGHT" *Photograph*

HIGH SPEED IN A NUTSHELL : Capt. H. S. Broad flying the D.H. " Tiger-Moth " (D.H. engine) at the Nottingham Flying Meeting on Monday.

["FLIGHT" *Photograph*

THE MYSTERY AIRWOMAN: Miss Poppy Short, with Mrs. Eliott-Lynn.

aerodrome the "Tiger-Moth" darted with amazing speed, occasionally "slow-motioning" and then spurting forward again. It was really a wonderful demonstration, concluding with a perfectly priceless landing.

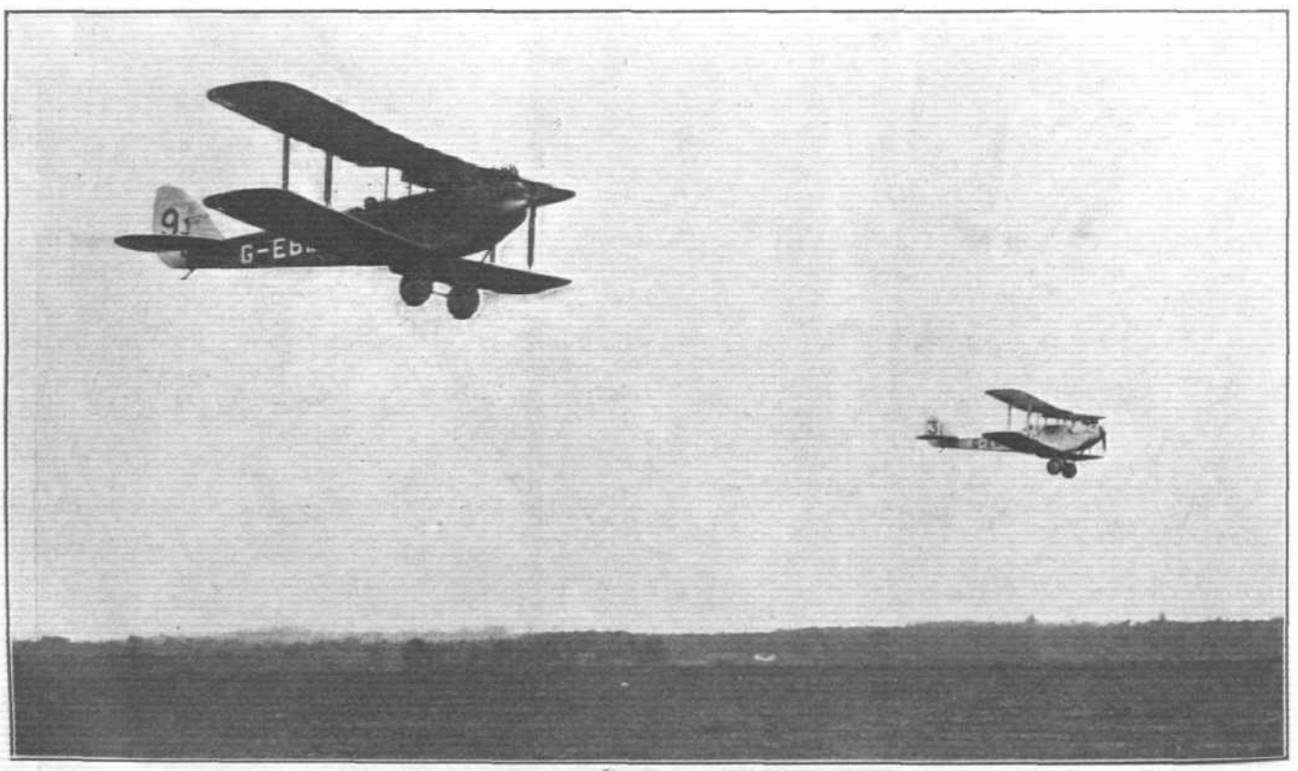
After this the final of the Pelham Stakes was flown, in which there were six starters as follows—Nos. 9, 2, 3, 26, 22 and 36. This resulted in another fine finish, all six crossing the line within six seconds. The winner was No. 22 (McDonough) with 5 min. 50 secs. (102 m.p.h.) and Lady Bailey was second with 5 min. 51 secs. No. 36 (Bramson) was third, with 5 min. 55 secs., and No. 26 (Martin) only two-fifths of a second behind. No. 9 (Noakes) was fifth (5 min. 56 secs.), and No. 2 (Sempill) sixth, three-fifths of a second after him.

The third event was a two-lap handicap race for the S.B.A.C. Challenge Cup, producing four starters as follows :—No. 4, le Poer Trench, on Halton biplane 'OO (3 min. 4 secs.) ; No. 27, Comper, on C.L.A.4 'PB (2 min. 34 secs.) ; No. 28, Capt. H. Spooner, on D.H. "Moth" 'LI (1 min. 26 secs.) ; and No. 35, F./O. D. W. F. Bonham-Carter, on Avro "Avian" 'QN (scratch). At the end of the first lap No. 27 was leading, with No. 2 close behind ; the latter landed, however, before crossing the line, and retired. No. 28 came past next, followed by No. 35, rapidly catching up. On the final lap the remaining three crossed the line as follows :—1st, No. 35 (Bonham-Carter), time 12 min. 30 secs. (speed 96 m.p.h.) ; 2nd, No. 28 (Spooner), time 12 min. 43 secs. ; 3rd, No. 27 (Comper), time, 12 min. 52 secs.

The next event the High Power Handicap Race for the Hucknall Stakes, was somewhat disappointing, as there were only three starters, of which two completed the course—four laps. The starters were :—No. 36, M. L. Bramson on S.E.5a 'IA (4 mins. 24 secs.) ; No. 24, W. G. R. Hinchliffe on D.H.9 "Nimbus" 'KO (3 mins. 28 secs.) ; and No. 25, Sqdn.-Ldr. Jones on "Boreas-Nimbus-Martinsyde (2 mins. 28 secs.). The Avro "Avenger," the scratch machine, was a non-starter.

Bramson retired after the first lap, and as No. 25 was making rapid headway, it was obvious from the first that the result would be a "fly over." This it was, No. 25 obtaining the lead on the third lap, and eventually finishing first in 15 mins. 53 secs., with a speed of 141·2 m.p.h. No. 24's time was 16 mins. 44 secs.

The race for the Ladies' Purse came next, and not only was it a good race, but it caused a mild sensation. Originally, there were only three competitors—No. 28, Miss O'Brien on "Moth-Cirrus I" 'LI (35 secs.) ; No. 9, Mrs. Eliott-Lynn on "Moth-Cirrus I" 'MV (35 secs.) ; and No. 3, Lady Bailey on "Moth-Cirrus II" 'PU (6 secs.). Just before the start, however, Air'Drome Marshal Loader was asked to get "Avian" No. 8 ('RS) on to the starting line for a mystery lady pilot. Machine and pilot eventually took up their positions. The pilot—Miss Poppy Short, whose ambition



["FLIGHT" *Photograph*

THE NOTTINGHAM FLYING MEETING: A close finish for the Ladies' Purse. Mrs. Eliott-Lynn in D.H. "Moth" 'MV (left) crosses the line but two yards ahead of Lady Bailey on D.H. "Moth" 'PU.

is to beat the altitude record—very stylishly dressed was introduced to those around before taking her seat in 'RS.

The first three ladies got away in fine style, but alas, Miss Poppy failed to get off, Mr. Reynolds' (the official starter) red flag apparently unnerving her, for 'RS merely went round and round on the ground !

Meanwhile the race proceeded, Lady Bailey gaining on Mrs. Eliott-Lynn, who had already passed Miss O'Brien. The finish was most exciting, for flying down the final leg it seemed that Lady Bailey was leading, but when crossing the line Mrs. Eliott-Lynn dived, and got across first—but only by about two yards !

After this came the event of the day—the race for the Grosvenor Challenge Cup. This race produced 14 actual starters, so the race was split up into three heats and a final. In each case the course was over two laps (about 17 miles), and the three heats produced some good racing, while the final resulted in an exciting and close finish between all competitors.

The starters, and their handicap allowances, in the first heat were as follows :—

No. 29 (NY) O. J. Tapper, D.H. " Moth–Cirrus I " ..	3	6
No. 2 ('RF) Col. Sempill, Blackburn " Bluebird–Genet "	2	30
No. 8 ('RS) G. Boyes, Avro " Avian–Cirrus II " ..	1	50
No. 26 ('SK) B. Martin, D.H. " Moth X–Cirrus II "	1	1
No. 12 ('QL) D. Watt, Avro " Avian–Cirrus II " ..	0	48

On the first lap Nos. 29 and 2 changed places, but the rest continued in the same order of starting. Further changes of positions took place on the final lap, however, for although No. 2 maintained the lead, No. 26 got home second, 5 secs. later, and 16 secs. behind came No. 8, third. No. 29 was fourth, and No. 12 did not cross the line. The times were as follows :—1st, No. 2, 11 mins. 55 secs (87½ m.p.h.) ; 2nd, No. 26, 12 mins. ; 3rd, No. 8, 12 mins. 16 secs. ; 4th, No. 29, 12 mins. 39 secs.

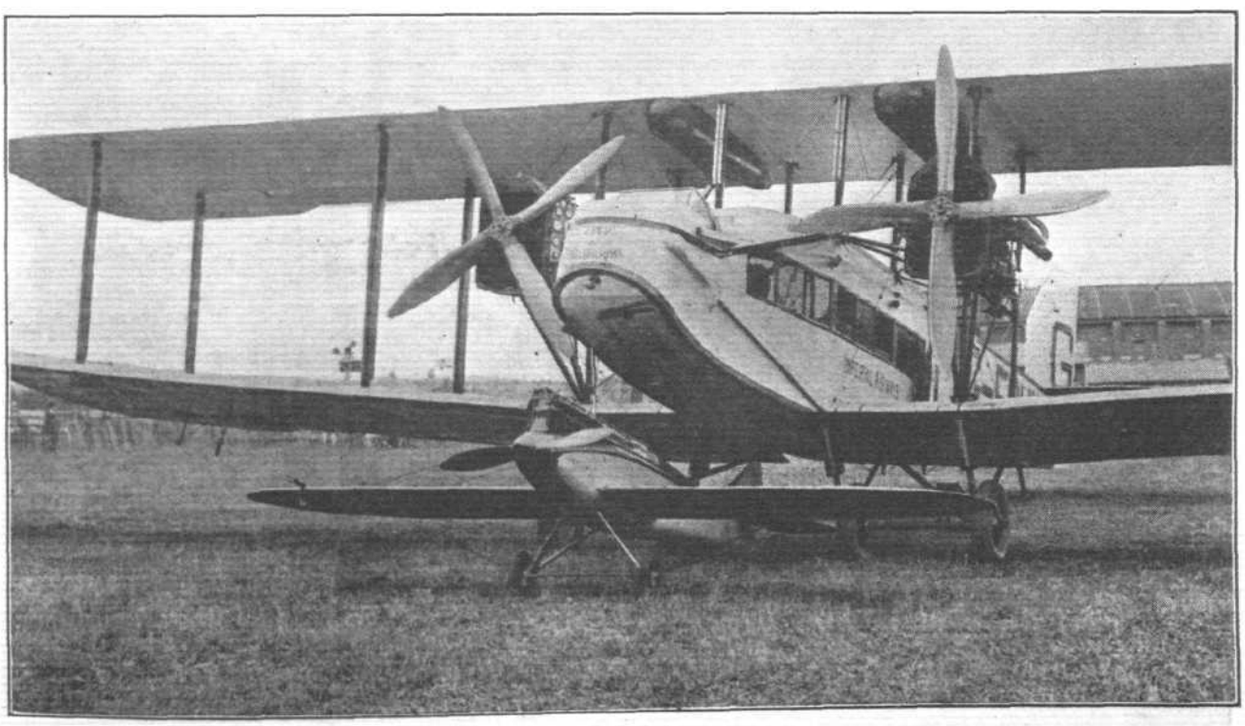
The starters for the second heat were :—

No. 28 ('LI) H. Spooner, D.H. " Moth–Cirrus I " ..	2	50
No. 10 ('RQ) H. Brooklyn, " Widgeon III–Genet "	1	40
No. 3 ('PU) Lady Bailey, D.H. " Moth–Cirrus II "	1	29
No. 22 ('RL) W. J. McDonough, " Widgeon III–Cirrus II "	0	37
No. 13 ('SD) B. Hinkler, Avro " Avian–Alpha II " ..	Scratch	

In this heat all retained their relative positions on the first lap, but on the second No. 28 fell out, while No. 10 got ahead of No. 3 and finished first by 5 secs. Only one-fifth second separated third (No. 13) and fourth (No. 22). Times—1st,

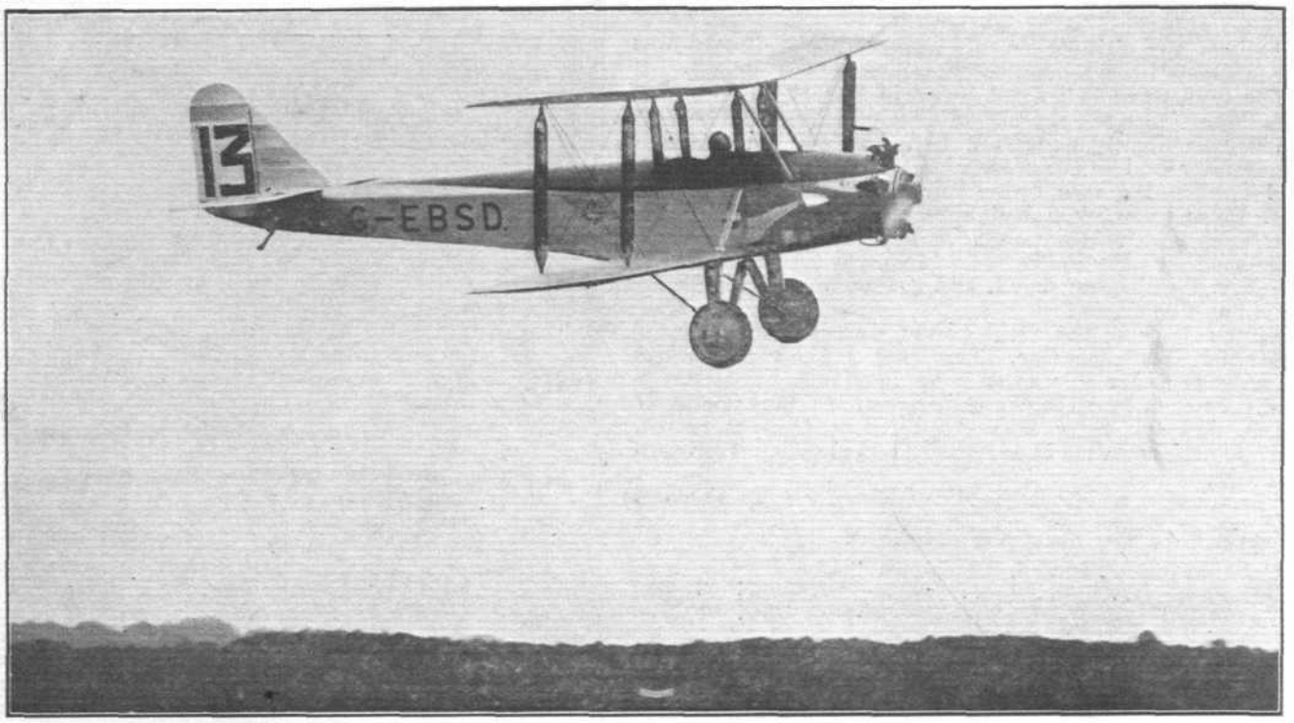
["FLIGHT" *Photograph*

THE WINNER OF THE GROSVENOR CUP : Mrs. S. C. Eliott-Lynn, who won the race on her "Moth," M V.



"FLIGHT" *Photograph*

GET YOUR MAGNIFYING GLASSES OUT : The D.H. " Tiger-Moth " (D.H. engine) takes shelter under the Imperial Airways Handley Page air liner, " City of Melbourne," which spent a busy time at Hucknall taking up passengers.



THE NOTTINGHAM FLYING MEETING : Hinkler on the Avro "Alpha-Avian" in the Grosvenor Cup.

No. 10, 11 mins. 37 secs. (94¾ m.p.h.) ; 2nd, No. 3, 11 mins. 42 secs. ; 3rd, No. 13, 11 mins. 43 secs. ; 4th, No. 22, 11 mins. 43⅕ secs.

There were only four starters in heat 3, viz. :—

No. 9 ('MV), Mrs. Eliott-Lynn, D.H. "Moth-Cirrus I"	2	42
No. 32 ('SF), Capt. G. de Havilland, D.H. "Moth X-Cirrus II"	1	46
No. 35 ('QN) F/O. Bonham-Carter, Avro "Avian-Cirrus II	1	9
No. 37 ('JT), F/O. J. R. Adams, "Widgeon II-Genet"	0	54

Except for No. 37, who retired on the first lap, all maintained the order of starting right up to the finish, which was, however, a close one, as may be seen from the following :— 1st, No. 9, 11 mins. 17 secs. (87¾ m.p.h.) ; 2nd, No. 32, 11 mins. 45 secs. ; 3rd, No. 35, 11 mins. 47 secs.

The first two from each of the previous heats started in the final as follows :—

No. 9 ('MV), Mrs. Eliott-Lynn, D.H. "Moth-Cirrus I"	1	41
No. 2 ('RF), Col. Sempill, Blackburn "Blue Bird"	1	29
No. 32 ('SF), Capt. de Havilland, D.H. "Moth X"	0	45
No. 10 ('RQ), H. Brooklyn, "Widgeon III-Genet" ..	0	39
No. 3 ('PU), Lady Bailey, D.H. "Moth-Cirrus II" ..	0	28
No. 26 ('SK), B. Martin, D.H. "Moth X-Cirrus II" ..	scratch	

On the end of the first lap the machines were in much the same order, Nos. 32 and 10 being very close together, while No. 26 was making good headway. At the finish, however, all got pretty close together and crossed the line thus :—

1st, No. 9, 11 mins. 12 secs. (88½ m.p.h.) ; 2nd, No. 2, 11 mins. 28 secs. ; 3rd, No. 10, 11 mins. 29 secs. ; 4th, No. 26, 11 mins. 32 secs. ; 5th, No. 32, 11 mins. 34 secs. ; 6th, No. 3, 11 mins. 34⅖ secs.

Mrs. Eliott-Lynn was thus the winner of the Grosvenor Challenge Cup, and once again a veteran D.H. "Moth" obtained a victory.

["FLIGHT" *Photograph*

THE NOTTINGHAM FLYING MEETING : Harold Brooklyn, on the Westland "Widgeon III" ("Genet"), who finished third in the Grosvenor Cup race.

(*Concluded from page* 536)

been very disappointed that they were out of the picture. Contrariwise, a certain special correspondent was not at all sorry to get to bed soon after 01.00.

Thursday 28th inst.

The weather showed no improvement, and again was all in favour of the enemy, although it sometimes tried to equalise matters by obscuring the target from their view. The first raid of the day had to be abandoned on account of the weather. I am not sure whether this raid was made by No. 11 or No. 12. One would imagine by No. 11, as the clouds have been especially unkind to this squadron during the week. At any rate, No. 11 sent up a flight which crossed the coast near Worthing at 08.45 hrs. It reached Chelsea, but as the target was obscured by clouds the Horsleys did not release their bombs. There is still chivalry in war. A flight of No. 17 Fighter Squadron was hunting these Horsleys, but failed to find them.

No. 39 Bombing Squadron also had a poor morning. It sent up one flight at 07.52, but in less than half an hour the flight had to return to Spittlegate on account of the weather. Two flights were sent up at 13.46, and they crossed the coast at Foulness and reached Uxbridge, which they bombed from 14,000 ft. While there the formation was spotted by No. 111 Fighter Squadron, but at the moment of writing the result of this recognition has not been divulged. On its return the D.H.9A's ran into No. 41 Fighter Squadron, which was then looking for another raiding formation, and was attacked.

No. 207 Bombing Squadron was again unfortunate this morning. One flight crossed the coast at Rye at 15,500 ft. at 13.07 hrs., but was intercepted three times, first by No. 25 Squadron near the coast (N.B.—These aerodromes on the coast at Hawkinge and Tangmere seem to have proved very useful during these operations)—then by No. 56 over Biggin Hill at 13.47, and again by No. 56 over Maidstone about an hour later. There cannot have been much left of the three D.H.9A's.

Other raids took place in the evening and during the night, but at the moment of writing the results are not known.

This afternoon a R.A.F. officer of high rank said in an interview that it would be premature to draw any definite conclusions from the results up to date. These operations were not manœuvres in the proper sense of the word, but exercises. They were intended to test the defence scheme so far as it had been built up in two years. But it would take about eight years more to complete the scheme, so that now it was only about one-quarter completed. And that quarter had not been developed uniformly. They had concentrated on essentials. Communications were vital, and they were intricate. They were still using G.P.O. telephone lines, and the G.P.O. had been most helpful. The direct lines which would be necessary in war were not ready. The ground troops who worked the searchlights were Territorials (though during these exercises some regulars had been lent by the army from the Expeditionary Force). The Territorials were not full-time men, and such matters as co-operation between the sound locators and the searchlights required high skill and long training. The observers on the coast were all volunteers, special constables. Their work had been extremely good, and could not be praised too highly. It had made remarkable progress in the last twelve months.

The time factor governed everything. It took an aeroplane only from 25 to 35 minutes to fly from the coast to the London area,and therefore communications must be rapid and good. The air defence also had to work hand in glove with the ground defence.

They might have real air manœuvres eight years hence At the moment only broad lessons could be drawn. They had seen the expression used "London wiped out." That was premature. The defence was like a Soccer team playing a match when only at one-quarter strength. When the defensive system was complete it would be time to judge if it was effective.

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"AIR FACTS AND PROBLEMS"

AT a time when, thanks chiefly to the light aeroplane clubs, to the recent transatlantic flights, to Sir Samuel and Lady Maud Hoare's flight to India, and to the flying and lecturing publicity successes of Sir Alan Cobham, the public is beginning to take a real and slightly intelligent interest in flying, a popular book on the subject, written by a man with a well-known name, was badly wanted. Lord Thomson of Cardington has supplied the need.

The late Air Minister, very wisely, does not attempt to be technical. He does not tell the man in the street why an aeroplane flies. But he takes most of the facts of the present-day position, and sets them forth in language which all can understand. Mr. John Murray has produced the book in a form which puts it within the reach of all, and there is not a single illustration to increase the cost. Author and publisher together are to be congratulated on having set a certain goal before themselves and on attaining it. This is no slight praise.

Lord Thomson was a professional soldier for 26 years. "As such," he confesses, "he shared the prejudices of most Army and Navy officers against new-fangled ideas." He is now a convert to the new-fangled idea of aircraft. He instances his conversion as a sort of proof of his impartiality and sweet reasonableness; but it is notorious that the convert is the worst fanatic. Having decided to swallow aircraft as a factor in war, Lord Thomson swallows it whole, and makes no bones about it. In brief, he believes that the air campaign will be all important, or very nearly so, in the next war, and that the object to which air forces will be directed will be "striking at nerve centres," which means the slaughter of civilians in mass. A few sentences may be quoted. On p. 24: "Neither belligerent will seek a general engagement between air forces; each will be aiming at vital points in the territory of the other, not only as the best means of defence, but also as the quickest way of achieving the sole object of any war, once it has started—victory at the earliest possible moment." On p. 26: "The way to win will be by the ruthless bombing of localities, which in many cases will be densely populated. For every combatant killed in action 10 civilians will quite probably be slaughtered in their workshops or their homes."

One wonders very much whether those opinions are held and taught at the R.A.F. Staff College at Andover. They were certainly not held by Mr. J. M. Spaight when he wrote, "Air Power and War Rights," and they are not held by a very weighty writer who signs himself "Squadron Leader," and whose book, "Basic Principles of Air Warfare," shall be reviewed in these columns. For the present two questions may be asked: (*a*) Would not a decisive victory over the enemy's air fighters in a general engagement be the quickest way of all of achieving victory? and (*b*) if the casualties in aerial encounters amount to 80 per cent. per mensem at the outset, as Sir Hugh Trenchard has estimated, and as Lord Thomson quotes, how will any nation be able to maintain the air strength necessary for such intensive and widespread bombing? Unless one side speedily gains a marked aerial ascendancy, will not the air forces speedily cancel each other and leave it to the armies and navies to fight out the war?

We may turn to Lord Thomson's views on organisation. He is, naturally, an upholder of the prevailing system of unified air control, and he says, with plenty of justification, that the dual system (namely, the R.F.C. and the R.N.A.S.) had a fair trial and was found wanting. He does not consider or discuss the system suggested by some naval writers, which might be called the triple system, in which there would be a powerful air defence force working under the air staff, while the navy and the army would each maintain an ancillary air arm for their own purposes. The disregard of this suggestion has led Lord Thomson into using an argument which is a veritable two-edged sword and could be used with great effect against him. The passage occurs on p. 39 and runs as follows: "Efficiency requires uniformity of training; it is bound to suffer if there are two schools of thought as different as those which have always obtained, and still obtain, in any army and navy; it also demands the development of *esprit de corps*, which cannot exist if an airman is at the same time either a soldier or a sailor." Whether one agrees with Lord Thomson's general principle or not, one must confess that a counsel for the Admiralty might (*mutatis mutandis*) have used exactly the same words to support the claim for a fleet air arm of its own with which the Air Ministry should have no concern whatever. Such pleaders talk about uniformity of naval training, the need of naval *esprit de corps*, and the impossibility of efficient working when certain elements on naval ships belong not to the Admiralty, but to the Air Ministry. Lord Thomson proceeds: "For an air force to function properly it must be commanded by men who understand aviation thoroughly and the characteristics of the personnel; the old days when admirals and generals, of sufficiently good family, commanded armies and fleets alternately and indiscriminately have passed." This, again, is admirable doctrine. It undoubtedly applies to an air defence force, but soldiers and sailors would surely maintain that it applies with equal force to an army and to a navy. The passage concludes: "Lastly, there must be undivided responsibility for such purposes as air defence. To divide this all-important task between two Services is to court disaster." At last Lord Thomson is on quite unassailable ground. His point has even been admitted by some eminent naval writers. We have not yet put the principle completely into practice: for the anti-aircraft batteries and searchlights are undoubtedly part of air defence, and are not yet under the control of the Air Ministry. But the question remains. Are the fleet air arm and the army co-operation squadrons part of air defence? Or are they respectively part of naval defence and military defence? The earlier sentences of this passage of Lord Thomson are a powerful argument for accepting the latter alternative.

However strongly one may hold a certain view, it is always imprudent to disregard the best arguments of the opposition. Practically everyone is agreed that air defence must be under an Air Ministry, which maintains an air staff and an air force. Differences of opinion only arise over the question which Ministry is to raise and control the fleet air arm and the army co-operation squadrons. However firmly anyone may believe the present arrangement to be best, he should remember that there is no Ministry of Artillery and that both navy and army possess their own guns. It should also be remembered that the Admiralty needs gunners and infantry, which it maintains under the name of Marines. It seems not improbable that before long the air force in such places as Iraq, may need infantry of its own, as it already possesses armoured car companies; while, as pointed out above, it already needs gunners and guns to make complete its responsibility for air defence in Great Britain. Lord Thomson has not taken these points into consideration in his book.

On commercial flying, Lord Thomson is distinctly good. He knows his subject and he puts it forward well. He has himself travelled far and wide by aeroplane, and he has put commercial airships on the road which, we all hope, will lead to success. One only wishes that this side of flying had occupied a larger proportion of his very interesting book.

F. A. de V. R.

* Air Facts and Figures. By Lord Thomson. John Murray. 6s. net.

PRIVATE FLYING

A Section of FLIGHT in the Interests of the Private Owner, Owner-Pilot, and Club Member

THE GROWTH OF PRIVATE FLYING

THE interest peculiar to private flying lies in its direct appeal to the man-in-the-street. It is his particular sphere in this expanding aeronautical age, or it is designed for that ultimate purpose. It embodies a practical example of flying which he can pursue, although it may at present have its financial burdens, which puts it beyond the reach of all for whom it is intended. But that is a minor ill, natural in the early struggle for survival. It will pass. The main point is that private flying knocks flying off its pedestal and makes it commonplace; and that which is commonplace is the monopoly of the man-in-the-street, for he is commonplace, the back-bone of the earth. He has no truck with pioneering in life for he has neither the time nor the means. He only wants the things that have been tried and proved, when it becomes his equally important duty to carry them through as a common activity; to attach them to life, as it were. This establishment of private flying is the first attempt to give him a place in aeronautics of his own. Previously he has had to be content to sit back and admire that which was beyond his reach and comprehension. He only knew flying as spectacular and of a purely impersonal nature. Today, the sensational in flying has no value to him for it only proves what he cannot do. Only that which a private flier can do is of value to private flying. Eventually, it will be the means of knocking all sensation out of flying and nobody will then be distinctive because they fly; on the contrary, they will be distinctive if they do not fly.

Now, it is easy to see that private flying has its coming value in its direct adaptation to the common needs of life. Flying is eminently suitable for the common crave for hurrying, but, paradoxically, it satisfies it with the least apparent hurry. It also has many minor advantages over the ordinary means of travel. There is a comfortable freedom from the clutches of rigid time-tables enforced by others and standing room only. No ticket is necessary as evidence of one's honesty, and there is no danger of being caught travelling in the wrong class. You are not limited to the white line, neither are you at the mercy of the white glove. Every time the throttle is open in an excess of desire for speed it does not mean forty shillings and a caution. There are no traffic blocks and the roads are not narrow. You are as free as the birds in the air because you are birds in the air. You literally "drop in" on friends now. That term "drop in" is always misapplied. It is obviously an aeronautical term. You do not "drop in" on anyone by road; you merely arrive. You may get a "drop in" but that is a totally different thing.

A New List of Private Owners

The expansion of private flying is clearly indicated by this second list of owners given below and by the illustration showing "mass production" at Stag Lane. With the first list published in FLIGHT, April 14, the total of registered private owners is now 52. This figure must not be carelessly assumed as also representing all private fliers, who, of course, will far outnumber those who own machines. It will be noted that since her recent tour in the Hon. Geoffrey Cuncliffe's "Moth," piloted by Capt. C. Barnard, the Duchess of Bedford has become a private owner. Capt. Bailey has had his own machine painted with the colours of his regiment. Mrs. Eliott-Lynn, who owned an S.E.5A previously, has now both a "Moth" and an "Avian." Lieut. R. R. Bentley has had his "Moth" fitted as a single-seater, the passenger cockpit having extra petrol tanks installed. Mr. M. G. W. Burton owns the first private light-seaplane, his "Moth" being fitted with Short floats. Although this new list clearly reveals the sustained popularity of "Moths" it is interesting to note that other light aeroplanes which have hitherto been lying low are coming into the picture, and finding a deserved favour with owners. Very soon we believe they will be even more prominent if the lists of reserved registration markings are any criterion. The "Wood Pigeons," owned by F./O. Scraggs and Mr. Luther Taylor, are stable companions of the "Widgeons." The D.H.53's are the single-seater monoplanes, not to be confused, of course, with the new D.H. racing monoplane.

MASS PRODUCTION AT STAG LANE:—This assembly of twenty "Moths" was taken at Stag Lane recently, and with the exception of getting them lined up no previous arrangements had been made for their presence. The group includes those owned by Lady Bailey, Lord Ossulston, the Hon. Geoffrey Cuncliffe, Capt. W. R. Bailey, Mr. D. Kittel and Capt. Eric Hayes.

A Stranger in Club Fleets

THE Light 'Plane Clubs have also acquired new machines. It will be noted that the Blackburn " Bluebirds " make their début among them. The Yorkshire Club obviously believes that charity begins at home for they have two " Bluebirds," not that it means that it is merely an act of charity to buy a " Bluebird." The New Suffolk Club is the other Club who is departing from the moth-eaten path. The R.A.E. Club at Farnborough now bring their fleet up to four if the " Cygnet " and " Sirocco " are still in the stable. Our readers may notice that old registration letters appear in this list attached to the machines of new owners. The explanation is that such machines have changed ownership, which necessitates re-registration in the new owner's name, but the original letters remain. A machine goes through its whole career with the same registration letters, just as an honest man does with his name.

New List of Private Owners

Name of Owner.	Type of Machine.	Identification Letters.	Date of Registering.
Lieut. R. R. Bentley ..	D.H. " Moth " ..	G-EBSO ..	25.7.27
R. A. Bruce	Westland "Widgeon III "	G-EBRL ..	11.5.27
Sir Harold Bowden	D.H. " Moth " ..	G-EBSK ..	28.7.27
Capt. W. R. Bailey	D.H. " Moth " ..	G-EBQY ..	13.5.27
M. G. W. Burton	D.H " Moth " ..	G-EBRH ..	18 5.27
Duchess of Bedford	D.H. " Moth " ..	G-EBRI ..	18.5.27
Flight-Lieut. D. V. Carnegie	D.H.53	G-EBRW ..	8.6.27
R. P. Cooper	D.H.53	G-EBRA ..	26.4.27
Mrs. Eliott-Lynn	D.H. " Moth " ..	G-EBMV ..	11.7.27
Mrs. Eliott-Lynn	Avro " Avian " ..	G-EBRS ..	19.7.27
Capt. de Havilland	D.H. " Moth " ..	G-EBSF ..	7.7.27
Capt. de Havilland	D.H.71	G-EBQU ..	5.4.27
Capt. Eric Hayes	D.H. " Moth " ..	G-EBQW ..	12.4.27
Mr. Bert Hinkler	Avro " Avian " ..	G-EBOV ..	7.4.27
A. C. M. Jackaman	D.H. " Moth " ..	G-EBRT ..	31.5.27
Geoffrey Linnell	D.H. " Moth " ..	G-EBSA ..	21.7.27
F. L. Mill	D.H. " Moth " ..	G-EBSQ ..	28.7.27
J. H. McClure	D.H. " Moth " ..	G-EBRU ..	8.6.27
Gerald Merton	D.H. " Moth " ..	G-EBQZ ..	31.5.27
Lieut. G. Madocks	S.E.5a	G-EBQQ ..	4.4.27
Capt. A. Milburn	D.H. " Moth " ..	G-EBRZ ..	30 6.27
Sqd.-Ldr. H. M. Probyn ..	Westland " Widgeon III "	G-EBRQ ..	11.7.27
L. G. Richardson	D.H. " Moth " ..	G-EBPQ ..	3.5.27
D. M. M. Rooke	D.H. " Moth " ..	G-EBQJ ..	14.5.27
Flying-Officer A. F. Scroggs	Westland "Wood Pigeon "	G-EBIY ..	12.5.27
Luther Taylor	Westland " Wood Pigeon II "	G-EBJV ..	27.6.27
R. N. Thompson	D.H.53	G-EBRK ..	23.5.27
Flight-Lieut. A. M. Wray ..	Bristol " Scout "	G-EAGR ..	20.6.27
G. N. Warwick	A.N.E.C. IV " Missel Thrush "	G-EBPI ..	28.4.27
E.R. Wilson	D.H.53	G-EBRJ ..	20.5.27

The Clubs.

Name of Club.	Type of Machine.	Identification Letters.	Date of Registering.
Yorkshire Aeroplane Club ..	Blackburn " Bluebird "	G-EBRF ..	11.5.27
Yorkshire Aeroplane Club ..	Blackburn " Bluebird "	G-EBRG ..	11.5.27
Norfolk and Norwich Aero Club	D.H. " Moth " ..	G-EBQX ..	18.5.27
Newcastle Aero Club ..	D.H. " Moth " ..	G-EBQV ..	13.4.27
Suffolk Aeroplane Club ..	Blackburn " Bluebird "	G-EBRE ..	11.5.27
Bristol and Wessex Aeroplane Club	D.H. " Moth " ..	G-EBSN ..	23.7.27
Light Planes (Lancashire), Ltd.	Avro " Avian II "	G-EBRR ..	15.7.27
R.A.E. Aero Club	D.H.53	G-EBQP ..	4.4.27
R.A.E. Aero Club	Avro " Avian " ..	G-EBQN ..	4.5.27

A " MOTH " IN TOW

WE see in the photograph accompanying this article an apt illustration of the adaptability of private flying to our common experiences. We are not altogether certain, however, that we are fair to light aeroplanes generally in publishing this photograph of a " Moth " being towed along the country road near Oxford by a new Morris chassis, with another chassis following, apparently to make certain that the " Moth " does not get away. We suggest it must be an awful indignity to be towed, particularly by an inferior.

He received notification that a Morris chassis was ready for collection at the factory, and, the demand being brisk, and Mr. Wilson being brisk, too, he decided to fly down to Oxford from Leeds (although there is a train service) that same evening, accompanied by a friend. Leaving Sherburn, the Yorkshire Club's aerodrome near Leeds, at 6.30 p.m., he landed at Port Meadow, Oxford, at 8.30 p.m. This two hours' flight saved eight hours over the train journey. The next morning he collected the Morris chassis. The weather,

In Tow.—The " Moth " being towed by the Morris chassis with another chassis following to keep it from escaping, Mr. Wilson is on the right.

Personally, we have the strongest objection to being toed by anybody, because for one reason it hurts. Admittedly it is better to be towed by a car than, say, a car-owner. To account for this undignified lapse on the part of a light aeroplane we can only suppose that the Morris chassis towed the " Moth " because the " Moth " could not tow the Morris chassis. We will accept this explanation this time, but don't let it occur again. Mr. A. G. Wilson, of Leeds, sells Morris cars for a living, and flies a " Moth " for a hobby. If he lives to be a hundred he will probably sell " Moths " for a living and fly a " Moth " for a hobby.

however, was typically English, so the " Moth " was folded up, hitched to the chassis and towed along the road until the weather cleared up. One would naturally imagine that this implied returning all the way by road, but they only reached Banbury when the weather was thought fit for flying, so the " Moth " was pushed into a field, the wings unfolded, and an ascent made by Mr. Wilson's friend, who continued the rest of the journey to Leeds by air. This is believed to be the first time that a motor agent has utilised a private aeroplane for the collection of a car from the works.

LIGHT 'PLANE CLUBS

London Aeroplane Club, Stag Lane, Edgware. Sec., H. E. Perrin, 3, Clifford Street, London, W.1.
Bristol and Wessex Aeroplane Club, Yate, Gloucester. Sec., C. S. Clarke, Channel Road, Walton Park, Clevedon, Somerset.
Hampshire Aeroplane Club, Hamble, Southampton. Sec., Maj. Ross White, Hamble, Southampton.
Lancashire Aero Club, Woodford, Lancs. Sec., C. J. Wood, Oakfield, Dukinfield, near Manchester.
Midland Aero Club, Castle Bromwich, Birmingham. Sec., Maj. Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.
Newcastle-upon-Tyne Aero Club, Cramlington, Northumberland. Sec., A. H. Bell, c/o The Club.
Norfolk and Norwich Aero Club, Mousehold, Norwich. Sec., H. O. Bennett, 5, Opie Street, Norwich.
The Scottish Aero Club Movement, 101, St. Vincent Street, Glasgow. Sec.: Harry W. Smith.
Suffolk Aeroplane Club, Ipswich.—Secretary, Courtney N. Prentice, "Hazeldell," Stowmarket, Suffolk.
Yorkshire Aeroplane Club, Sherburn-in-Elmet, Yorks. Sec., J. F. Barnes, 39, Swan Arcade, Bradford.

LANCASHIRE AERO CLUB

REPORT for week ending July 30 :—

Total flying time 33 hrs. 10 mins. Made up of 15 hrs. 20 mins. dual, 9 hrs. 10 mins. solo, 7 hrs. 20 mins. joy-ride, and 1 hr. 20 mins. test-flights.

The following had instruction with Messrs. Brown and Cantrill :—Messrs. Heys, Torres, Stonex, Fisher, Anderson, Riley, Davidson, Allott, Dobson, Rodman, Meades, Hartley, Caldecott, Hollindrake, Ward, Watson, Gattrell, Parker, Doherty and Miss Baerlein.

The following flew as pilots :—Messrs. Rowley, Leeming, Costa, Goodfellow, Agar, Davidson, Nelson, Dobson, Caldecott, Torres, Williams, Ward, Anderson, Hardy, Gattrell, Scholes, Miss Baerlein.

The following had joy-rides :—Messrs. Jeffery, Schofield, Bennion, Mills, J. P. and E. Pringle, Rigby, Crossland, Bours, Adams, Bandelia, Vianna, Ogden, Allott, Heys, Arty, Brito, Torres, Caldecott, Mrs. Worthington, Mrs. Robinson, Mrs. Rigby and the Misses Thomas, Hollindrake, Marshall, Taylor, Wooton and Worthington.

We have still only two serviceable machines, but the week has nevertheless proved a record one for first solos, of which there have been no less than five—Miss Baerlein, and Messrs. Davidson, Caldecott, Torres and Anderson—AND there are still two serviceable machines.

Our Avian, G-EBRR, was withdrawn from the King's Cup on publication of the handicaps. Personally one is all in favour of a joke, but owing to the cost of insurance, coupled with the fact that the machine would have to be away for several days, it was felt that this particular joke was one we couldn't afford to share in.

BRISTOL & WESSEX AEROPLANE CLUB

FLYING time :—The total flying time for the week ending July 30 was 5 hrs.

Dual with Mr. Bartlett : Miss Honor Pitman, Messrs. Bolas, Hugh Clarke, Downs-Shaw, Hall, Hopper, Macauley, Robertson, Tiarks.

Mr. Bartlett took over our first training machine (Moth) on Thursday and flew to Filton. Regular instruction began next morning.

The Club is fortunate in starting with a fine hangar, also a club room, lecture room, and Secretary's office. These are being rapidly fitted up with furniture by enthusiastic members.

We hope to take over the Brownie and Pixie presented to the Club, which machines will be available for solo flying by qualified pilots. Will you please note the new Secretary, Colonel Flemming, The B. & W. Aeroplane Club, Filton, Bristol ?

NEWCASTLE-UPON-TYNE AERO CLUB

FLYING report for week ending July 31.—Total time flown, 50 hours 20 mins. Two Moths were in operation throughout the week, and in spite of several bad days as regards weather, two records for the Club were created. The largest amount of flying carried out during one week ; also the greatest single day. On Sunday the 31st, a total of 18 hours 45 mins. was completed. It is felt that, although the excellent record attained by the London Aeroplane Club has yet to be reached, it is felt that the above total is exceedingly satisfactory with a fleet of only two machines.

The lady members and wives of members (with families) were entertained to a pic-nic and tea by Mrs. Irving, and the Aerodrome had a strange appearance, due to the absence of the fair sex, but one is led to wonder how much of the success of the day could be attributed to the fact that the ladies were absent. However, the male members enjoyed themselves, and from all accounts the ladies did also, so everyone is pleased.

The following members flew under instruction :—Messrs. McDougall, Robertson, Maxwell, Heaton, Irving, Lawson, DePledge, Pargeter, Rasmussen, Middleton, Davey, Hayton, Kennedy, Thirlwell, Mrs. Heslop and Miss Leathart (the latter on advanced dual).

The following flew solo and with passengers :—Messrs. D. Wilson, Maxwell, R. N. Thompson, C. Thompson, H. Ellis, Robertson, Turnbull, Shaw, Davey, A. Bell, Rasmussen, McDougall, Kennedy, Bainbridge, Elmes, Thirlwell, Pargeter, Mrs. Heslop, Miss Leathart, and Dr. Dixon.

The following members were "launched" and all put up very good performances :—Mr. Robertson, Mr. McDougall and Mr. Rasmussen.

The following flew as passengers :—With Mr. C. Thompsom—Mrs. Fairless, Mrs. Heslop, Miss Laidlow, Miss Matthews, and Mr. London. With Mr. R. N. Thompson, Miss Cochrane, and the Masters Edmundson. With Mr. Mathews, Mr. Percy. With Dr. Dixon, Mr. Munn. With Mr. Parkinson, Mr. Bulmer, Mr. and Mrs. Stephenson. With Mr. A. Bell, Miss Cleaver, Miss Bulmer, Mr. Munn, Mr. J. Bell.

NORFOLK & NORWICH AERO CLUB

WEEK ending July 24.—Flying hours, 20.00 ; week ending August 1, 21.30.

We are pleased to report that excellent progress is being made, many more members joining weekly, and we have had the pleasure of seeing three more members go solo during the past week, foremost among whom is Mr. F. Gough, who, apart from being an active flying member of the club, is now, also, a private owner of an aircraft.

Capt. Ramsay also gave an excellent display as a soloist, and we hope to hear more of him later.

Capt. L. King also commenced solo flying during the week.

We are pleased to report that, "Flat-Turn Tommy" has now made such excellent progress he is on the eve of going solo.

Dual instruction with Mr. Lines :—F. Gough, H. Mack, R. Harmer, A. Marshall, T. Image, J. Morse, E. W. B. Scott, J. Cooper, A. Cooper, M. Lindley, H. Heave, R. Potter, F. Pauk, H. Birchall, Capt. L. King, Capt. Ramsay, T. Whitlock, and Mrs. H. Cator.

Solo Flying.—Sqdn. Ldr. C. A. Rea, Capt. L. King, R. F. W. Moore, Capt. Ramsay, and F. Gough.

Joy Rides.—Mr. H. O. Bennett.

Getting ready to go home. The Duchess of Bedford and her pilot, Capt. C. D. Barnard, about to return after a flying visit to the Nottingham meeting.

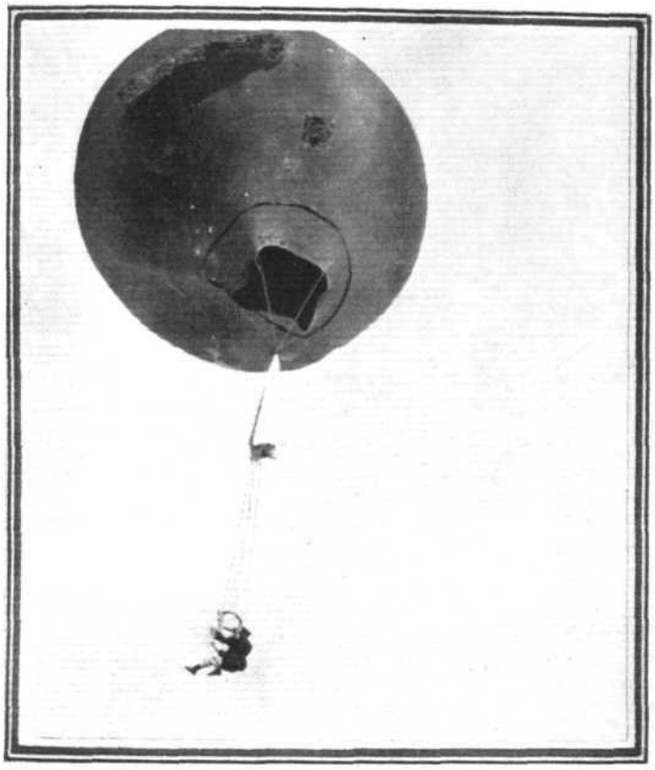
FLIGHT" Photograph

FLIGHT
AIRCRAFT ENGINEER & AIRSHIPS

AIRISMS FROM THE FOUR WINDS

Flying Off a Liner

MR. CLARENCE CHAMBERLIN, of Atlantic fame, successfully flew off the U.S. liner *Leviathan* in a Fokker biplane, fitted with a 200-h.p. Wright "Whirlwind" engine, on August 1. He ascended from a special runway about 114 ft. long when the liner was eight hours out, and eventually landed at Curtis's Field. It was an experiment to prove the possibility of expediting urgent mails and transporting passengers between the boats and the shore. Mr. Chamberlin and his companion, Mr. Levine, may possibly receive a return visit by air from the representatives of the little German town of Kottbus, for its local council, supported by local firms, is negotiating with Junkers for a flight across the Atlantic, as an official return visit to the famous American airmen who brought world-wide fame to the town when they landed there after crossing the Atlantic.



AN AUSTRALIAN PIONEER: Vincent Taylor ("Capt." Penfold), of Australia, who obtained his "Ticket" at the Bristol Lark Hill School in 1912, still soars aloft. Our picture shows him cloud-climbing with his balloon and parachute at Santa Cruz, California, U.S.A.—in which part of the world he has been operating an aerial advertising concern. Capt. Vincent, it may be remembered, made some parachute displays at Chelmsford, Putney, Croydon, Epsom, and Hendon in 1913.

Well Won

COLONEL THE MARCHESE DE PINEDO has been promoted to the rank of General in recognition of his exceptional services to Italian aviation.

A Generous Tribute

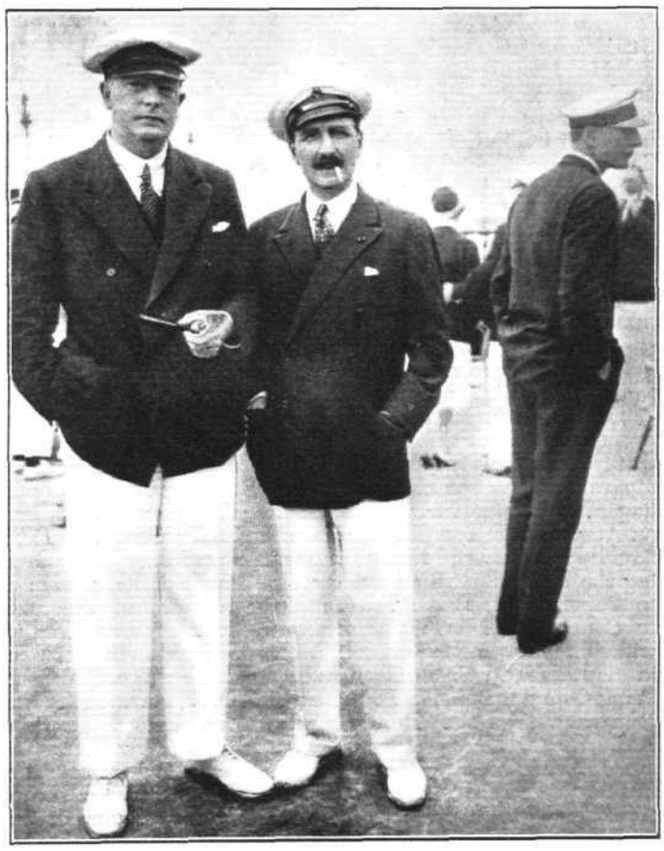
£6,000 has been collected in America for the mothers of the famous French airmen, Nungesser and Coli, who perished in their attempt to cross the Atlantic. This sum has been handed to the French Ambassador in Washington, M. Claudel, and it will be forwarded to President Doumergue, who will divide it equally between the two bereaved mothers.

Germany Enters Atlantic Arena

ACCORDING to *The Times* a prize of £5,000 has been offered through the German Aero Club and the German Aeronautical League for the first flight by a German airman from Germany to the United States, and two further prizes of £2,500 and £1,250 for the longest German duration flight. The donor of the prize money has not been named. The conditions of the award will be framed so as to exclude purely sporting entries, the successful flight being required to demonstrate the possibility of a Transatlantic passenger service. According to one forecast, competitors for the £5,000 prize will have to make their attempts with multiple-engined machines unless they fly seaplanes, in which case a single engine will be permitted.

London to London

IT is stated now that the pilot chosen for the London, Ontario-London, England flight is Mr. James D. Vance, a Canadian-born pilot. He was formerly a Flight-Lieut. in the Royal Naval Air Service and flew delegates to the Versailles Peace Conference after the Armistice. He will choose his own companion.



TWO FAMOUS AIRCRAFT CONSTRUCTORS AT DEAUVILLE: Mr. C. R. Fairey and M. Louis Breguet at the recent regatta. Between them they have produced the bulk of the world's general purpose aircraft.

Disappointments

THE French Government and the Ontario Government have stopped the proposed Atlantic competitors who come under their control. This apparently means that the famous French pilot, Capt. Costes, will have to abandon his flight, and so will Capts. Maxwell and Tully, of Canada, the plans of whom we have previously referred to. Mr. Vance would seem to have taken the place of the latter pair.

A Princely Nose: The Handley Page "Hamlet" has now been fitted with two Armstrong-Sidde ley "Lynx" engines. A false "nose" rounds off the fuselage where formerly a third engine was placed. In the cockpit is seen Squadron-Leader England, who has now joined the Handley Page staff.

Still Going Strong.

MR. DENNIS ROOKE left Allahabad for Asanor, in Bengal, on his way to Calcutta, on July 28. He is having many adventures on his long flight in his "Moth" to Australia, but both he and his machine are patiently persevering. At Calcutta, repairs will be necessary before he can reach Rangoon.

A Healthy Sign

THE increase in passengers on the Cairo-Baghdad-Basra line has now brought about a reduction in fares on all sections on this route. These will come into force at once, and will be as follows:—Cairo to Baghdad, from £41 to £32; Cairo to Basra, £51 to £41; Gaza to Baghdad, £34 to £25; and Gaza to Basra, from £44 to £34. There are also considerable reductions in the rates for excess luggage. The air line now runs weekly instead of fortnightly.

A Dignified Trio

ON August 12, three of our latest types of flying boats will leave Felixstowe for a cruise to Scandinavia. Sir Samuel Hoare will be a passenger on one of them as far as Copenhagen. He is visiting the Danish Aero Show, which opens on August 20. The boats will be the Blackburn "Iris," the Saunders "Valkyrie," and the Short "Singapore." After crossing the North Sea, they will fly to Oslo via Esbjerg, then on to Copenhagen, Danzig, Helsingfors, Stockholm, and back to Copenhagen. On the return flight to Felixstowe they will come via the Helder, reaching home about the first week in September. The officer in command will probably be Wing-Commander R. B. Maycock, O.C. Marine Aircraft Experimental Establishment, Felixstowe.

A Long Fall

M. VAN LAERE, a French air pilot, fell from a height of 22,000 ft. recently, when attempting an altitude record. Apparently his oxygen apparatus became displaced, and with such physical effect on him that he lost complete control of the machine, which nose-dived towards the earth. After a desperate struggle he managed to clamber out of his cockpit at 1,500 ft. and descend by parachute, falling into a tree, where he was found in an exhausted condition. It was a remarkable escape.

To Africa in Seventeen Hours

FLIGHT-LIEUT. R. L. RAGG is to attempt a record long-distance flight on a light aeroplane about the middle of this week. The start will be made from Manston Aerodrome, near Margate, and the course will be across France and Spain to Tangier on the North African coast. He will fly the R.A.E. Club's Hawker "Cygnet," which is fitted with a 32-36 h.p. Bristol "Cherub III." engine. This machine won the second prize in the *Daily Mail* light aeroplane contests at Lympne in September last year. Additional petrol tanks have been fitted. The attempt is expected to take 17 hours. After the Channel crossing the exact places followed will be Boulogne, Biarritz, Madrid, Gibraltar, and then across the Mediterranean to Tangier.

Slotted Wing for Air Force Machines

THE Bristol Fighters used by the R.A.F. are to be fitted with the Handley Page "slot and aileron control." This is the decision of the Air Ministry following official tests that have been made at Martlesham Heath.

A Yorkshire Product

"IRIS II," the latest Blackburn production in flying boats, was launched at Brough, on the Humber, on August 2. The test pilot was Flight-Lieut. Sawyer. The designer of the boat was Maj. Rennie, who is responsible for flying-boat design in the Blackburn Aeroplane Co. On completion of the preliminary tests at Brough the "Iris II" will be flown to Felixstowe for official tests.

London–Teheran in Five Days

IT is now possible to get through from London to Teheran by air for a fare of £50, taking five days to complete the trip. The Junkers firm are making this possible, and the stages will be Teheran-Baku (Junkers), Baku-Moscow (Dernluft), and Moscow-London (Lufthansa).

At Last

ON August 7 the Brazilian seaplane "Jahú" landed at Santo Amaro, in the State of Sao Paulo, amidst great enthusiasm. It recently reached Brazil after a flight across the Atlantic, having stopped at the Azores for a sojourn of six months!

Accident at Leuchars

SIR HUGH TRENCHARD, Marshal of the R.A.F., was present at Leuchars Aerodrome, Fife, when a machine flown by Flying-Officer Winkler and Pilot-Officer Jack fouled the telegraph wires and nose-dived into the accountant's offices, injuring themselves and Flight-Lieut. Money and Flight-Lieut. Brownlee. The accident happened during bombing tests.

Caught in the Act by a Seaplane

ONE of the seaplanes from the cruiser *Vigilant* caught a steam trawler using an illegal method of fishing known as "otter trawling," and the master was summoned.

Flying at 90.

AT the age of 90, Mrs. Hannah Smith, of Harrow, has made her first flight in an aeroplane, over that district. She has thereby gratified a long wish.

Carr Tries Again

JUST as we are about to go to press it is learned that Fl.-Lt. C. R. Carr has made yet another unsuccessful attempt to beat the world's distance record on a Hawker "Horsley" with Rolls-Royce "Condor" engine. On the third attempt Carr was accompanied by F/O. E. C. Dearth. The machine alighted in the Danube, the crew being shaken but not seriously hurt.

FLIGHT
AIRCRAFT ENGINEER AUTOGIRO

THE ROYAL AIR FORCE

London Gazette, July 26, 1927.

General Duties Branch

Lieut. C. I. A. Jackson (Royal Tank Corps) is granted a temp. commn. as Flying Officer on seconding for four years' service with the R.A.F.; July 16. The follg. are granted short service commns. as Pilot Officers on probation, with effect from, and with seniority of, July 18:—P. G. J. Atkinson; I. B. Beesley; F. T. K. Bullmore, Sec. Lieut. R.A. (T.A.); H. Box; R. W. M. Clark; A. R. Combe; H. J. Cross; F. D. Dawson; G. Fachiri; C. E. V. L'E. Feasey; A. R. Grenfell; G. K. Horner; G. R. Jackson; K. E. Jones; D. J. Hughes-Morgan; J. R. Mathews; U. H. Mignon; A. P. Miller; F. W. Murison; F. J. Sarsfield-Sampson; M. G. Sedorski; G. E. E. Singleton; V. S. W. Smyth; B. G. Thompson; O. G. Williams; P. W. M. Wright. L. M. Woolveridge is granted a short service commn. as Pilot Officer on probation with effect from July 20, and with seniority of July 18.

The follg. Pilot Officers on probation are confirmed in rank:—J. R. Mutch; July 1. B. H. Ashton, B. A. J. Crummy, R. C. Edwards, H. V. Forbes, R. C. Greenhalgh, R. G. Hennessy, D.S.O., M.C., D. K. Hewison, H. C. Marett, M. M. Restall-Little; July 14. W. G. Cheshire; July 28.

Group-Capt. M. G. Christie, C.M.G., D.S.O., M.C., is restored to full pay from half-pay; July 23. Flight-Lieut. S. C. Harker is transferred to Reserve, Class A; July 27.

Stores Branch

Flight-Lieut. T. G. Bowler is granted a permanent commn. in this rank, with effect from Jun 24, 1926, on completion of probationary service.

Medical Branch

Flying Officer G. A. Ballantyne, D.F.C., is promoted to rank of Flight-Lieut. (Dental) on promotion to Captain in the Army Dental Corps; July 1. Flight-Lieut. J. J. Walsh is transferred to Reserve, Class D.1; July 27.

Flying Officer M. J. Marren, M.B., is dismissed the Service by sentence of General Court-Martial; July 6.

RESERVE OF AIR FORCE OFFICERS

General Duties Branch

G. E. Langdon is granted a commn. in Class A.A. as a Pilot Officer on probation; July 11. H. W. Foote is granted a commn. in Class C as a Flying Officer; July 26. Flight-Lieut. H. G. Brackley, D.S.O., D.F.C., is promoted to rank of Sqdn.-Ldr.; July 26.

The follg. Flying Officers are promoted to rank of Flight-Lieut., July 26:—W. R. G. Atkins, O.B.E.; R. W. Reeve, D.F.C., M.M.; H. S. Robertson; R. M. Stirling, A.F.C.; B. P. B. Carter, D.F.C. The follg. Pilot Officers are promoted to rank of Flying Officer:—L. S. Ash; May 30. E. P. Lash; July 4. C. E. F. Riley; July 11. J. R. W. Alexander; July 13. J. H. A. Wells; July 18. N. M. Browning; July 19.

Flying Officer J. H. Taylor is transferred from Class B to Class C; July 24. Flying Officer A. M. Glover resigns his commn. on appointment to a commn. in the Auxiliary Air Force; July 12.

AUXILIARY AIR FORCE

General Duties Branch

The follg. to be Flying Officer:—No. 605 County of Warwick (Bombing) Squadron—A. M. Glover; July 12.

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the R.A.F. are notified:—

General Duties Branch

Wing Commanders: P. C. Maltby, D.S.O., A.F.C., J. Sowrey, A.F.C., and H. Gordon-Dean, A.F.C., to R.A.F. Depot, Uxbridge, pending posting on completion of Staff Course, 30.7.27.

Squadron Leaders: M. Henderson, D.S.O., G. B. A. Baker, M.C., and J. O. Andrews, D.S.O., M.C., to R.A.F. Depot, Uxbridge, 30.7.27. A. W. F. Glenny, M.C., D.F.C., to H.Q., Wessex Bombing Area, Andover, 30.7.27. H. K. Torhold, D.S.C., D.F.C., A.F.C., to No. 58 Sqdn., Worthy Down, 30.7.27. J. J. Breen, to No. 24 Sqdn., Northolt, 30.7.27. N. C. Spratt O.B.E., to H.Q., Transjordan and Palestine, 6.6.27.

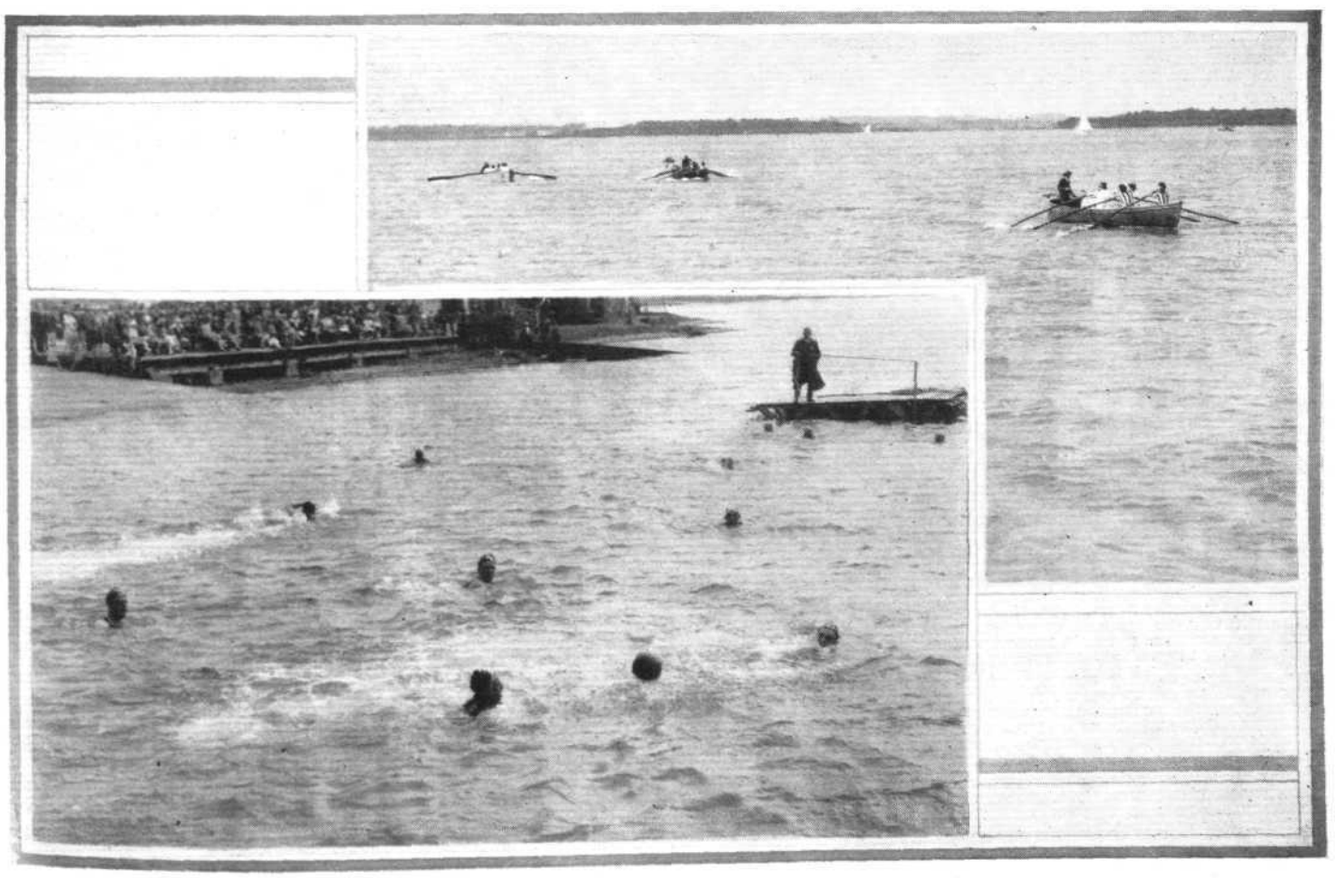
Flight Lieutenants: D. S. Don, to No. 24 Squadron, Northolt, 18.7.27. G. R. O'Sullivan, to R.A.F. Training Base, Leuchars, 1.8.27. A. G. Bond, A.F.C., A. H. Wann, A. L. Fiddament, D.F.C., G. E. Gibbs, M.C., and G. S. N. Johnston, to R.A.F. Depot, Uxbridge, 30.7.27. P. S. Jackson-Taylor, to R.A.F. Base, Calshot, 30.7.27. P. Warburton, M.B.E., to School of Army Co-operation, Old Sarum, 30.7.27. C. R. Steele, D.F.C., to Air Defence Group H.Q., 30.7.27. R. M. C. Macfarlane, M.C., to No. 13 Squadron, Andover, 30.7.27. R. J. Divers, M.B.E., to H.Q., Inland Area, Stanmore, 30.7.27. A. C. Bayley, to No. 12 Sqdn., Andover, 30.7.27.

Flying Officers: V. B. Bennett, A. King-Lewis and N. Carter, to Home Aircraft Depot, Henlow, 20.6.27. B. N. Murgatroyd, to R.A.F. Depot, Uxbridge, 11.6.27. C. I. A. Jackson, to No. 2 Flying Training Sch., Digby, on appointment to a Temp. Comm. on being seconded from the Army, 16.7.27. J. N. Young, to No. 31 Sqdn., India, 24.6.27.

Pilot Officers: The undermentioned Pilot Officers are posted to No. 2 Flying Training School, Digby, with effect from 16.7.27:—C. P. Barker, A. S. Barry, E. S. Batemen, M. G. Bircham, R. W. P. Collings, T. J. Davidson, D. Dickson, R. W. Duffey, F. J. Dunne, M. V. Dyas, F. G. Ferrier, D. G. P. Fitzpatrick, N. H. Fresson, M. G. R. Harris, T. L. Harrison, A. T. C. Hazeldine, A. D. Jones, M. R. Kelly, P. B. Manning, L. W. W. Modley, W. W. R. Monroe Higgs, H. A. U. Munro, A. L. T. Naish, B. D. Nicholas, L. S. Rollings, A. M. Stevens, D. I. Stewart, R. W. A. Stroud, W. P. J. Thomson, N. E. Whalley, and H. N. C. Williams.

The undermentioned Pilot Officers are posted to the R.A.F. Depot, Uxbridge, on appointment to Short Service Commissions (on probation), with effect from 18.7.27:—P. G. J. Atkinson, I. B. Beesley, F. T. K. Bullmore, R. W. M. Clark, A. R. Combe, H. J. Cross, F. D. Dawson, G. Fachiri, C. E. V. L'E. Feasey, D. J. Hughes-Morgan, A. R. Grenfell, G. R. Jackson, K. F. Jones, J. R. Matthews, U. H. Mignon, A. P. Miller, F. W. Murison, M. G. Sedorski, G. E. E. Singleton, V. S. W. Smyth, B. G. Thompson, O. G. Williams, H. Box, G. K. Horner, F. J. Sarsfield-Sampson, and P. W. M. Wright.

C. R. Shillingford, to R.A.F. Depot, Uxbridge, on appointment to a Short Service Commn. (on probation), 19.7.27.



["FLIGHT" *Photographs*

R.A.F. REGATTA AT CALSHOT: The upper photograph shows Lee-on-Solent winning in the whaler race, while below is a scene from the water-polo match (won by Calshot Station).

PASSING-OUT OF R.A.F. APPRENTICES, HALTON
Inspection by Sir Samuel Hoare

ON July 28 Sir Samuel Hoare made the passing-out inspection of the R.A.F. aircraft apprentices (1924 entry) of No. 1 School of Technical Training, Halton. In his speech Sir Samuel referred to the fact that Halton was now one of the biggest schools in the country, having nearly three times as many boys as Eton and four or five times as many as there were at his old school of Harrow. Twice a year Halton sent its contribution of 500 highly trained boys to the ranks of the Air Force; twice a year 500 young men went out into the world keenly interested in the great invention of flying, carefully trained to help the world make a safe and successful use of the aeroplane.

He believed that the experience of the last five years, during which Halton had been in existence, had amply justified its foundation. Many tributes, from widely different sources, had been paid the school, which justified his warmest congratulations to every one connected with the school, from the commandant to the newest and youngest boy.

Air Commandant C. L. Lambe, air officer commanding the school, gave the following report on the passing-out entry:—

This entry was the tenth to pass out into the Service on completion of the course of apprenticeship training.

Of the 515 originally enlisted: 49 were posted to Flowerdown for training as wireless operator mechanics; 30 have been discharged on medical or compassionate grounds, by purchase, or as "unlikely to become efficient airmen"; two have died and one deserted; three have been transferred to, and seven from, other entries, leaving 437 due to pass out now.

These have been trained as: fitters, aero engine, 215; fitters, driver petrol, 47; fitters, armourer, 29; coppersmiths, 39; carpenter riggers, 103; carpenter motor-body builders, 4.

A full report upon the three years' work which this entry has just completed has been sent to the Air Ministry, from which report the following principal points are quoted:—

This entry received the first two years of the training at Cranwell. The last year of the course was spent at Halton, but the Cranwell syllabus of training was continued, for this entry, unaltered.

The standard of discipline of the entry was good, but the ideal aimed at had not yet been attained. There were not as many apprentices of outstanding ability in this as in previous entries, but the general efficiency was high and of a very uniform standard. In the case of the carpenter-riggers a better balance had been obtained between the rigging and the construction sides of the training than in any previous entry. The educational results were satisfactory, the improvement shown by boys who appeared very backward upon entry being particularly noticeable.

The general health of the entry had been good; no diseases have taken an epidemic form. The average increase in height was 3·11 ins., and in weight 25·2 lbs.—a very commendable standard of development during the three years. The standard of physical training and games was good, but more instructors for the former and playing fields for the latter were required. It is expected that the introduction of inter-dormitory matches will be very beneficial.

The results of the final examinations, the principal part of which was conducted by the Central Trade Test Board, are as follows:—

Aircraft apprentices classified as L.A.C., 34; aircraft apprentices classified as A.C.1, 158; aircraft apprentices classified as A.C.2, 223; aircraft apprentices who failed, 16; aircraft apprentices not examined, 6. Total, 437.

Cadetships have been offered to: 365363 H. H. C. Hester; 356459 I. Crocker; 365487 H. P. Lewis; 365282 E. W. Lane; 365141 R. S. Lucy.

The undermentioned are retained for the advanced course for corporals:—

365485 L. Jobbins; 365565 S. Oldroyd; 365470 L. R. Hay; 365425 F. C. Gilby; 365501 E. Leigh; 365462 F. F. Tipple; 365496 K. V. Mason; 365253 G. L. Kirkland; 365429 D. H. Grundy; 365568 F. W. D. Roberts.

The following is a list of the awards offered by the Air Ministry:—

Grand aggregate, 365282 E. W. Lane; educational subjects, 365282 E. W. Lane; best fitter, aero engine, 365501 E. Leigh; best fitter, driver petrol, 365481 M. W. Willoughby; best fitter, armourer, 365565 S. Oldroyd; best coppersmith, 365356 L. J. T. West; best carpenter-rigger, 365282 E. W. Lane.

The Elliott Memorial Prize for the year 1927, offered by the council of the Royal Aeronautical Society, has been awarded to 365150 T. W. Buckler.

R.A.F. ELECTRICAL AND WIRELESS SCHOOL, FLOWERDOWN
Passing-Out Inspection by Air Vice-Marshal Sir John Higgins

ON July 25 Air Vice-Marshal Sir John Higgins, Air Member for Supply and Research, made the sixth passing-out inspection of aircraft apprentices from the Flowerdown (Hamps.) Electrical and Wireless School, R.A.F. Following an inspection of the whole *personnel* of the station at a march-past on the parade ground, Sir John Higgins visited the workshops and school rooms, and inspected the work of the apprentices. Afterwards there was an assembly in the school theatre, where the Commandant of the School, Gp.-Capt. R. P. Ross, made the following report on the entry now passing out.

Altogether there were 259 aircraft apprentices under training at Flowerdown (exclusive of this passing-out entry). Of these 196 were being trained as wireless operator mechanics, and 63 as electricians.

The standard of discipline and drill maintained by the present passing-out entry had been very good, and the health of the aircraft apprentices, on the whole, had been very good.

A high standard had been maintained in the technical sections and workshops, and the whole of the syllabus had been covered. The voluntary evening classes had been very well attended and every aircraft apprentice had successfully operated wireless instruments in the air. A satisfactory educational standard had been maintained by this entry.

This entry had also maintained a high athletic standard. Several would have represented the unit at the R.A.F. athletic championships, but were prevented from doing so due to the C.T.T.B. final examination coinciding with these events. Eight aircraft apprentices of this entry were members of the Aircraft Apprentices Football XI, which won the Southampton Minor Cup last year, while a number of them have played in the unit Rugby, hockey and cricket teams.

Keenness had been shown in the gymnasium and the miniature rifle range, and there was promise of several gymnasts and marksmen of merit.

Of the present entry nine had passed out as leading aircraftmen; 24 had passed out as aircraftmen, First-class; 14 had passed out as aircraftmen, Second-class. There had been two failures.

A cadetship had been offered to 365567 R. L. Phillips, who is also the winner of the Hyde-Thomson Memorial Prize, kindly awarded by R. D. Hyde-Thomson, Esq.

The following were retained for the advanced course with a view to passing out as corporals:—365630 T. H. Farnsworth, 365546 J. H. Woffinden, 365259 F. T. Honey, 365144 B. H. Bridge.

No. 365630, T. H. Farnsworth, won the prize offered by the Air Ministry for the aircraft apprentice who obtained the highest aggregate marks in all sections.

No. 365546, J. H. Woffinden, won the prize offered by the Air Ministry for the aircraft apprentice who obtained the highest marks in technical subjects.

No. 365336, F. C. Rogers, won the prize offered by the Air Ministry for the aircraft apprentice who obtained the highest marks in educational subjects.

IN PARLIAMENT

Schneider Cup Race

COLONEL DAY, on July 27, asked the Secretary of State for Air how many high-speed machines of the Supermarine-Napier and Gloster-Napier types are being built; how many, including reserves, are to be sent to Venice for the Schneider Cup race; and whether a warship or aircraft carrier is to accompany the British Schneider Cup team?

Sir Philip Sassoon: The answer to the first part of the question is that three of each of the types of aircraft mentioned are built or are being built for experimental work; to the second part, that three Supermarine and two Gloster machines together with a Short seaplane fitted with a Bristol engine, will be sent to Venice to be tested out in the Schneider Cup race. As regards the last part, an aircraft carrier and four destroyers will visit Venice at the time of the race, and it has been arranged with the Admiralty that they shall give such assistance as may be possible to the British team.

Colonel Day: Can the hon. Baronet say how long before the race the team will be allowed to go to Venice, so that they can practise over the course?

Sir P. SASSOON: I think about a week.

Night-Flying Practice

MR. MACKINDER asked the Secretary of State for Air whether he is aware that night-flying practice is taking place at frequent intervals from the Biggin Hill aerodrome, and that this is causing serious inconvenience to the inhabitants of Bromley and district; and whether he will arrange for the necessary night-flying operations to be conducted away from large centres of populations?

Sir S. Hoare: If the defence of London by air is to be efficient, night-flying practice from the aerodromes allotted to units comprised in the scheme of defence is essential. It is, I fear, impossible entirely to avoid disturbance to people living in the vicinity of such aerodromes, but the disturbance is, and will be, strictly limited to that which is unavoidable if training is not to suffer.

Royal Air Force Film

MR. HORE-BELISHA, on July 28, asked the Secretary of State for Air whether any decision has been reached by the Contracts Department of the Ministry with regard to the applications submitted by a number of film companies with a view to the production of an Air Force film?

Sir S. Hoare: Yes, sir: a decision has been reached, and negotiations are now in progress with the firm to whom it is proposed to entrust the production of the film.

NEW COMPANY REGISTERED

FAIREY AVIATION CO., LTD., Cranford Lane, Hayes, Middlesex.—Capital £100, in £1 shares. Adopting an agreement with the Fairey Aviation Co. Ltd. (incorporated in 1926), manufacturers of and dealers in water and aeroplanes, and aerial conveyances and aircraft of all kinds, and the component parts thereof, including engines, builders of hangars, garages, sheds, aerodromes, etc. First directors, C. R. Fairey, F. G. T. Dawson, C. O. Crisp, Lt.-Col. V. Nicholl, D.S.O., D.S.C., M. E. A. Wright.

AERONAUTICAL PATENT SPECIFICATIONS

(*Abbreviations*: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

APPLIED FOR IN 1926

Published August 4, 1927

9,308. J. E. BROYLES, H. E. ROBERTSON and T. H. WEILER. Airships. (250,602.)

10,254. J. E. BROYLES, H. E. ROBERTSON and T. H. WEILER. Airships. (273,844.)

15,991. ARMSTRONG-SIDDELEY MOTORS, LTD., F. M. GREEN and H. L. TOWNS. Throttle mechanism for i.c. engines. (273,891.)

18,499. BLACKBURN AEROPLANE AND MOTOR CO., LTD., and J. D. RENNIE. Means for changing or installing engines on aircraft. (273,912.)

25,822. J. S. ABREU. Aeroplane construction. (273,940.)

32,692. H. JUNKERS. Devices for preventing oil losses in lubrication of reciprocating engines. (265,157.)

APPLIED FOR IN 1927

Published August 4, 1927

4,254. H. R. MCCLINTOCK. Parachutes. (266,345.)

11,056. J. VOROBEITCHIK. Seaplanes. (269,940.)

13,518. H. F. ALBIHN. Parachutes. (271,488.)